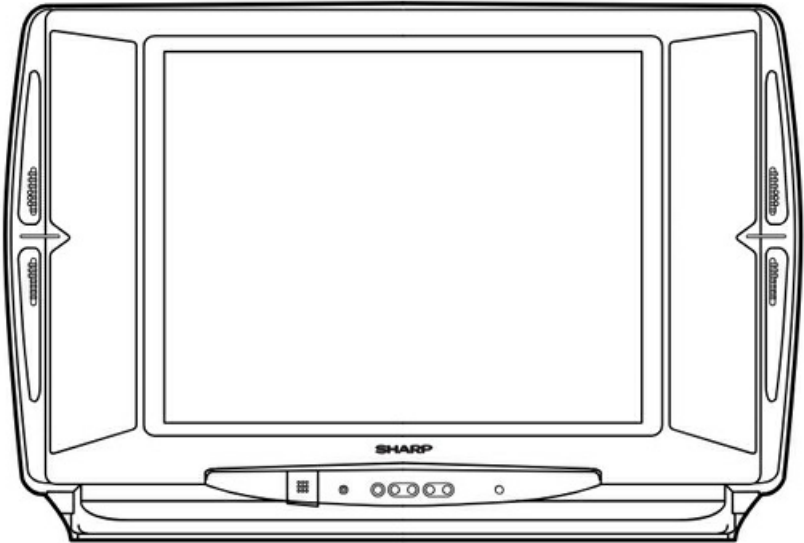


SHARP 20CT-250 SERVICE MANUAL



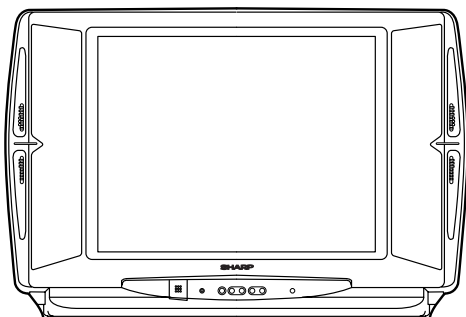
Quick Links

[Schematic Diagram](#)

Table of Contents

Table of Contents
service manual
sharp corporation
SPECIFICATIONS
IMPORTANT SERVICE NOTES
ADJUSTMENT PRECAUTIONS
SERVICE ADJUSTMENT
purity adjustment
convergence adjustment
TROUBLE SHOOTING TABLE
chassis layout
SOLID STATE DEVICE BASE DIAGRAM
SCHEMATIC DIAGRAM
BLOCK DIAGRAM
REPLACEMENT PARTS LIST
PRINTED WIRING BOARD ASSEMBLIES
miscellaneous parts
crt unit
supplied accessories
packing parts
cabinet parts
SHARP CORPORATION
Other ManualsLib Projects

SHARP SERVICE MANUAL



COLOUR TELEVISION *Chassis No. G2*

MODEL 20CT-250

In the interests of user-safety (Required by safety regulations in some countries) the set should be restored to its original condition and only parts identical to those specified should be used.

FEATURE

- User Preset Timer (On Timer/Sleep Timer/Reminder)
- 2 Selectable OSD Languages (English/Thai)
- CATV (Hyper Band) Ready
(Used Frequency Synthesizer Tuner)
- NTSC 4.43/3.58MHz (AV only), Rear AV IN/OUT terminal
- Blue Back Noise Mute
- Fine Tuning Adjustable with Remote Control
- Full Auto Channel Preset And Auto Channel Skip
- 100 CH Program Memory
- Aperture Control Circuit
- Black Stretch Circuit
- Bilingual System (Mono)
- Auto Channel Scan System
- Favorite Channel Memory System

CONTENTS

	Page		Page
• SPECIFICATIONS	2	• CHASSIS LAYOUT	17
• IMPORTANT SERVICE NOTES	2	• SCHEMATIC DIAGRAM	19
• ADJUSTMENT PRECAUTIONS	3	• BLOCK DIAGRAM	23
• SERVICE ADJUSTMENT	6	• PRINTED WIRING BOARD ASSEMBLIES	25
• TROUBLE SHOOTING TABLE	15	• REPLACEMENT PARTS LIST	27
• SOLID STATE DEVICE BASE DIAGRAM	18		

WARNING

The chassis in this receiver is partially hot. Use an isolation transformer between the line cord plug and power receptacle, when servicing this chassis.

To prevent electric shock, do not remove cover. No user – serviceable parts inside. Refer servicing to qualified service personnel.

SPECIFICATIONS

Convergence	Self Converging System
Focus	Uni Bi-Potential Electrostatic
Sweep Deflection	Magnetic
Intermediate Frequencies	
Picture IF Carrier	38.9 MHz
Sound IF Carrier Frequency	33.16/33.4 MHz
Colour Sub-Carrier Frequency	34.47 MHz
Power Input	220-240V AC 50/60 Hz
Power Consumption	80W
Audio Power Output Rating	3.0 W (at Max.)
Speaker	
Size	10 cm pcs
Voice Coil Impedance	8 ohms at 400 Hz
Aerial Input Impedance	
VHF/UHF	75 ohm Unbalanced
Receiving System	CCiR SECAM/PAL B, G NTSC 3.58/4.43 MHz (AV Input Only)
Tuner Ranges	
• VHF-Channels	E2 (48.25 MHz) thru E12 (224.25 MHz)
• UHF-Channels	E21 (471.25 MHz) thru E69 (855.25 MHz)
Dimensions	Width: 690.0 mm Height: 462.5 mm Depth: 481.0 mm
	Weight (approx.): 20.2 kg
Cabinet Material	All Plastics

Specifications are subject to change without prior notice.

IMPORTANT SERVICE NOTES

Maintenance and repair of this receiver should be done by qualified service personnel only.

SERVICING OF HIGH VOLTAGE SYSTEM AND PICTURE TUBE

When servicing the high voltage system, remove static charge from it by connecting a 10k ohm Resistor in series with an insulated wire (such as a test probe) between picture tube dag and 2nd anode lead. (AC line cord should be disconnected from AC outlet.)

1. Picture tube in this receiver employs integral implosion protection.
2. Replace with tube of the same type number for continued safety.
3. Do not lift picture tube by the neck.
4. Handle the picture tube only when wearing shatterproof goggles and after discharging the high voltage completely

X-RAY

This receiver is designed so that any X-Ray radiation is kept to an absolute minimum. Since certain malfunctions or servicing may produce potentially hazardous radiation with prolonged exposure at close range, the following precautions should be observed:

1. When repairing the circuit, be sure not to increase the high voltage to more than 24.5 kV (at beam 0 μ A) for the set.
2. To keep the set in a normal operation, be sure to make it function on 22.0 kV $\pm$ 1.5 kV (at beam 800 μ A) in the case of the set. The set has been factory – Adjusted to the above-mentioned high voltage.
• If there is a possibility that the high voltage fluctuates as a result of the repairs, never forget to check for such high voltage after the work.
3. Do not substitute a picture tube with unauthorized types and/or brands which may cause excess X-ray radiation.

BEFORE RETURNING THE RECEIVER

Before returning the receiver to the user, perform the following safety checks.

1. Inspect all lead dress to make certain that leads are not pinched or that hardware is not lodged between the chassis and other metal parts in the receiver.
2. Inspect all protective devices such as non-metallic control knobs, insulating fishpapers, cabinet backs, adjustment and compartment covers or shields, isolation resistor-capacity networks, mechanical insulators etc.

ADJUSTMENT PRECAUTIONS

This model's settings are adjusted in two different ways: through the I²C bus control and in the conventional analog manner. The adjustment via the I²C bus control includes preset-only items and variable data.

1. Calling the service mode by the microprocessor

- ① Set the switch S1006 to the service mode position, and the microprocessor is put in the service mode (adjustment through the I²C bus control).
- ② Press the CH UP/DOWN keys on the remote controller to select the modes one by one.
- ③ Press the CH UP/DOWN keys on the remote controller to select the modes in the order opposite to the above step ②.
- ④ Using the VOLUME UP/DOWN keys on the remote controller, the data can be modified.
- ⑤ Set the switch S1006 to the normal mode (OFF) position, and the microprocessor is put out of the service mode.

2. Factory presettings

- ① Set the switch S1006 to the service mode position and turn on the main power switch. Initial values are automatically preset only when a new E²PROM is used (judgment with the first 4 bytes).
- ② The initial data are preset as listed on page 5.
- ③ Keep in mind that some settings should be modified, and the others should remain as preset.

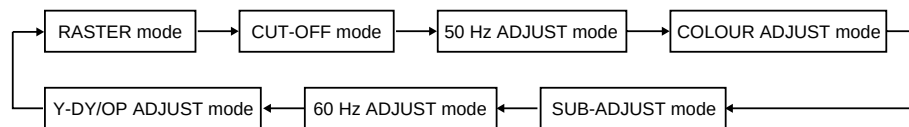
Note: Once the chassis has been put together, be sure to set the switch S1006 to the service mode position first and then turn on the main power switch (see the step 2.-① above). Turning on the power without initializing the E²PROM may cause a flow of excess beam current.



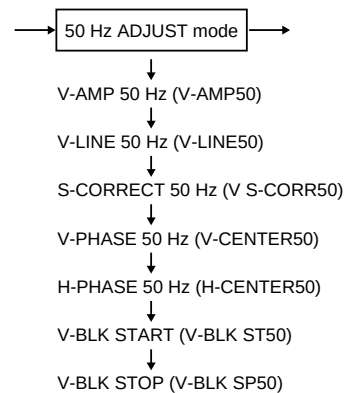
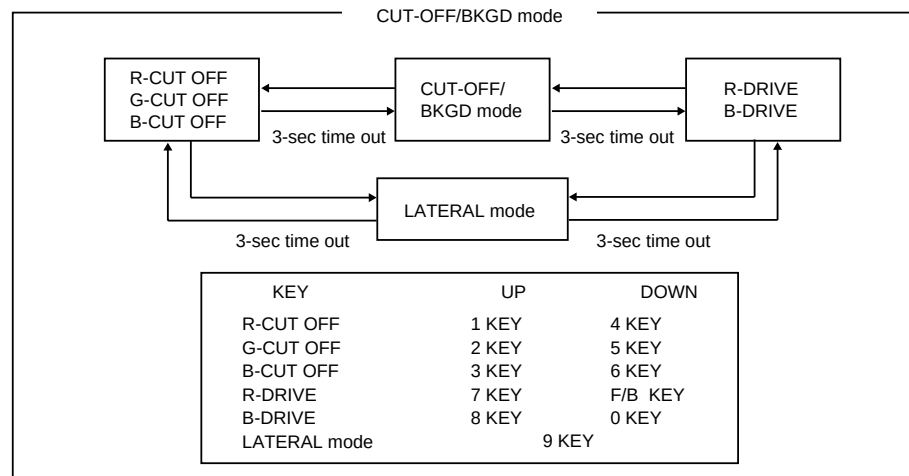
3. The accompanying memory map (11-page document for the RH-iX3031CE) is for your reference.

SERVICE MODE

(1) Press the specific keys to change the modes as follows.



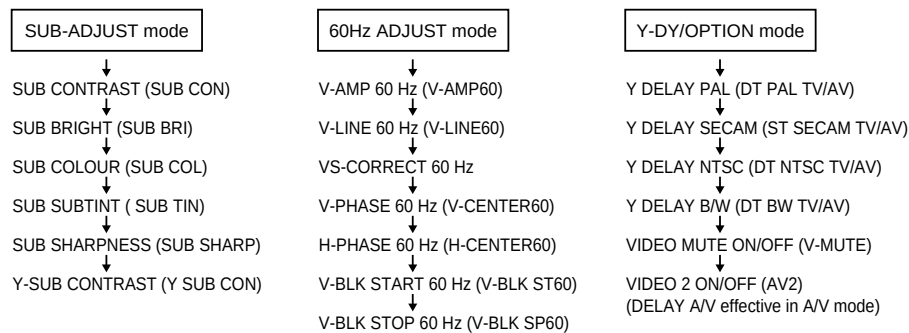
In the direction of arrow : CH DOWN key
In the opposite direction : CH UP key



In the direction of arrow : CH DOWN key
In the opposite direction : CH UP key

* The characters in parentheses appear on the on-screen display.

4-1



In the direction of arrow : CH DOWN key
In the opposite direction : CH UP key

* The characters in parentheses appear on the on-screen display.

* When the modes are switched, the last service mode data are stored into the E²PROM.

* In the service mode, the user data are preset as follows.

	User data
CONTRAST	MAX (64/64)
COLOUR	CENT (32/64)
BRIGHTNESS	CENT (32/64)
TINT	CENT (32/64)
SHARPNESS	CENT (32/64)
S-VOLUME	MIN (1/64)
BLUE BACK	OFF

* The following keys are used to go directly to their respective modes.

Mode	Key input
H-CENTER 50	PICTURE
V-CENTER 50	TEXT
V-AMP 50	INDEX
V S CORR 50	RED
V-LINE 50	GREEN
SUB CONT	CANCEL
Y SUB CONT	REVEAL
SUB COLOUR	TIMED PAGE
SUB BRIGHT	SIZE
SUB TINT	HOLD
SUB SHARP	RESET
R-Y	YELLOW
B-Y	CYAN
A/V 1/2	SKIP
VIDEO MUTE	BLUE BACK

4-2

*To go to the service mode, the data at the E²PROM's addresses 00H thru 03H are read. If the data are not as given below, the E²PROM is initialized according to the table below.

Address : Data
 00H : 23H 02H : 13H
 01H : 20H 03H : 61H

E ² PROM item	Data adjustable range	Data initial value	Remarks
(00H)	—————	23H	
(01H)	—————	20H	
(02H)	—————	13H	
(03H)	—————	61H	
R CUT OFF	0 ~ 255	0	
G CUT OFF	0 ~ 255	0	
B CUT OFF	0 ~ 255	0	
G DRIVE	0 ~ 255	127	
B DRIVE	0 ~ 255	127	
50Hz V-AMP	0 ~ 127	58	
50Hz V-LINEARITY	0 ~ 31	16	
50Hz S-CORRECTION	0 ~ 127	67	*1
50Hz V-PHASE	0 ~ 7	5	-3 *1
50Hz H-PHASE	0 ~ 31	7	+5 *1
V-BLK ST 50	0 ~ 63	58→63 (50Hz)	
V-BLK SP 50	0 ~ 127	25	
60Hz V-AMP	0 ~ 127	59	
60Hz V-LINEARITY	0 ~ 31	14	
60Hz S-CORRECTION	0 ~ 127	74	*2
60Hz V-PHASE	0 ~ 7	2	*4
60Hz H-PHASE	0 ~ 31	12	
60Hz V BLK ST	0 ~ 63	60→63 (60Hz)	
60Hz V BLK SP	0 ~ 127	20	
SECAM R-Y	0 ~ 15	10	
SECAM B-Y	0 ~ 15	6	
SUB-CONTRAST	0 ~ 255	255	*2
SUB-BRIGHT	0 ~ 255	127	
SUB-COLOUR	0 ~ 255	110	
SUB-TINT	0 ~ 127	70	
SUB-SHARPNESS	0 ~ 63	28	
Y SUB-CONTRAST	0 ~ 31	18	*2
DT PAL TV/AV	0 ~ 7	2/2	*2
DT SECAM TV/AV	0 ~ 7	4/4	*2
DT NTSC TV/AV	0 ~ 7	2/2	*2
DT B/W TV/AV	0 ~ 7	2/2	*2
V-MUTE	ON/OFF	OFF	
A/V 2	1/2	1	
NVM With all the adjustments complete, do not change the data of addresses 00H thru 03H. Otherwise the E²PROM will be initialized when the AC power is turned on.			

*1 : These data are additionally adjusted for 60Hz based on the 50Hz settings.

*2 : Unless otherwise specified, these data are fixed and need no adjustment.

*4 : Only 0 through 5 must be used in changing the data.

INITIAL SETTINGS OF CHANNEL SELECTION DATA

- (1) Make an entry of MCL1 in the service mode in order to set the following channel selection data to the E²PROM. And select the POS1 channel. (An MCL2, -3 or -4 input makes different settings.)

POS	RECEPTION FREQ (MHZ)	S-SYSTEM
1	48.25	B/G
2	62.25	B/G
3	77.25	D/K
4	175.25	B/G
5	182.25	B/G
6	183.25	D/K
7	191.25	D/K
8	196.25	D/K
9	210.25	B/G
10	224.25	B/G
11	471.25	B/G
12	487.25	I
13	503.25	B/G
14	575.25	B/G
15	599.25	B/G
16	621.25	—
17	639.25	D/K
18	703.25	B/G
19	735.25	I
20	767.25	B/G

POS	RECEPTION FREQ (MHZ)	S-SYSTEM
21	815.25	B/G
22	855.25	I
23	855.25	B/G
24	55.25	B/G
25	83.25	B/G
26	183.25	—
27	193.25	—
28	471.25	B/G
29	477.25	—
30	693.25	—
31	885.25	B/G
32	112.25	B/G
33	168.25	B/G
34	FREE	—
35	294.25	B/G
36	463.25	B/G
37	FREE	—
38	647.25	B/G
39	663.25	B/G
40	679.25	B/G

FACTORY SETTING

- (1) The following key-in data have been factory-set for the E²PROM.

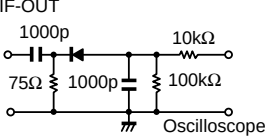
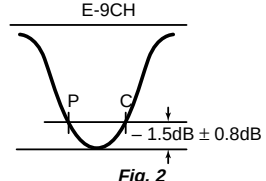
Item	Setting
SKIP	OFF
AFT	ON
C-SYSTEM	AUTO
S-SYSTEM	B/G
LAST POWER	ON
LAST TV/AV	TV
DIGIT	1DIG
LANGUAGE	THAI
BLUE BACK	ON
LAST POS	1
LAST FB POS	1
VOLUME	MIN
CONTRAST	MAX
COLOUR	CENT
BRIGHTNESS	CENT
TINT	CENT
SHARPNESS	CENT

SERVICE ADJUSTMENT

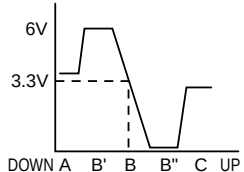
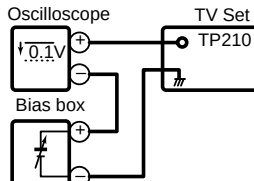
115V ADJUSTMENT

No.	Adjusting point	Adjusting procedure/conditions	Waveform and others
1	115V adjustment: R711	1. Receive the Monoscope Pattern signal. 2. Set to the P-NORM mode. 3. Connect a DC milliammeter between TP602(-) and TP603(+). 4. Take the beam ammeter reading to make sure that the beam current is between 900 μA and 1100 μA. * If not, readjust the FBT screen control to obtain the beam current of 900-1100 μA. 5. Connect a digital voltmeter to TP701. 6. Adjust R711 so that the digital voltmeter should read 115 ± 0.5 V.	

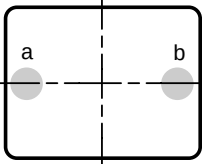
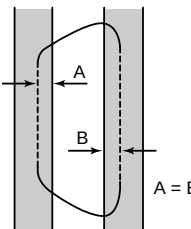
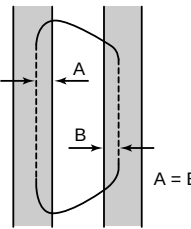
PIF CHECKING

No.	Adjusting point	Adjusting procedure/conditions	Waveform and others
1	Tuner IFT (preset): TU201	1. Get the tuner ready to receive the E-9CH signal, but with no signal input. Adjust the PLL data. 2. Connect the sweep generator's output cable to the tuner antenna. (RF sweep) 3. Adjust the sweep generator's output level to 80 dBμV. 4. Connect the response lead (use a low-impedance probe with wave detector; see Fig. 1) to the tuner's IF output terminal. (This terminal must have the probe alone connected.) 5. Set the RF AGC voltage to 0-6 V with no contact with the waveform. 6. Adjust the tuner IF coil to obtain the waveform as shown in Fig. 2. Note: Be sure to keep the tuner cover in position during this adjustment.	 Fig. 1  Fig. 2

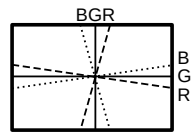
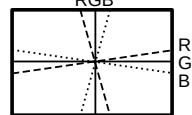
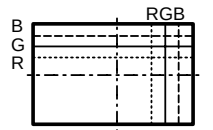
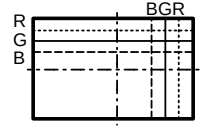
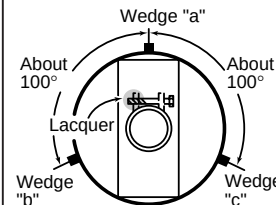
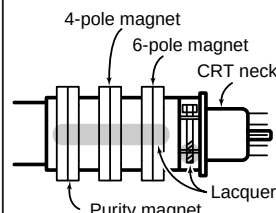
PIF/AFT/AGC ADJUSTMENT

No.	Adjusting point	Adjusting procedure/conditions	Waveform and others
1	VCO adjustment: T203	1. Disconnect the antenna from the tuner antenna terminal. 2. Apply DC voltage to pin (4) of IC201 (IF AGC). • DC voltage: 6.0 V (allowable +0.1 V) 3. Using a digital voltmeter, measure the DC voltage at pin (20)(PLL FIL) of IC201. * The digital voltmeter must be able to take readings down to the third decimal place. 4. Relieve pin (4) of IC201 of the DC voltage. 5. Reconnect the antenna in position and receive the E-12CH signal. (With the AFT off, adjust the receiving frequency to 224.25 MHz.) 6. Connect the DC digital voltmeter to pin (20) of IC201. Adjust T203 so that the voltmeter should read the same voltage as in Step 3. Allowable error : 0.015 V (20 kHz)	* Warm up the unit for longer than 10 minutes in advance. * 10 kHz at about 0.007 V. * Position the T203 core in the range in which the Colour Bar signal can be received.
2	AFT adjustment: T204	1. Receive the PAL Colour Bar signal. If this signal is not available, any signal above the E-5CH band is acceptable. • Field strength : 55-80 dBμV Make sure the frequency is almost the same as that of the received channel (± 30 kHz). 2. Using the channel setting control, make a frequency of 224.25 MHz appear on the screen (the AFT turns off). If any other channel than Colour Bar is received, make its frequency on the screen. (The AFT turns off when the on-screen display turns yellow.) 3. Turn T204 clockwise to have a 6V point, and counterclockwise to have a 0.2V point. Position the coil at the center of these two points. 4. Adjust T204 so that the DC voltage at pin (1) (AFT OUT terminal) of IC201 be 3.3 ± 0.1 V. (See Fig. 3)	DC voltage at TP201  Fig. 3
3	RF AGC cut-in adjustment: R216	1. Receive the PAL Colour Bar signal. • Field strength : 57 ± 1 dBμV (75 ohms open) 2. Connect the oscilloscope to TP210, as shown in Fig. 4.  Fig. 4 • Bias box: About 4.5 V 3. Turn R216 to have the highest voltage. 4. Turn R216 slowly in the opposite direction until the voltage goes down 0.1 V below the highest level. 5. Adjust the signal level to 63-67 dBμV and make sure there is no noise. 6. Now adjust the signal level to 90-95 dBμV and make sure there is no chrominance modulation beat.	

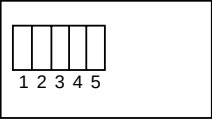
PURITY ADJUSTMENT

No.	Adjusting point	Adjusting procedure/conditions	Waveform and others
1	Purity adjustment	- Using the remote controller, make the screen colour green-only. Adjust the contrast control to have a beam current of about 700 μA. - Degauss the cathode ray tube enough with the degaussing coil. - Keep the purity magnet in the zero magnetic field in advance. Roughly adjust the convergence. - Observe the points "a" and "b", as shown in <i>Fig. 5-1</i>, through a microscope. Adjust the landing to the rank "A" requirements. - Adjust the raster rotation to "0" eastward. - Tighten up the deflection coil screws. - Tightening torque: 108 $\pm$ 20 N (11 $\pm$ 2 kgf) - While observing the cathode ray tube corners, apply the magnet sheet to have the landing at rank "A". Note: Before starting this adjustment, warm up the unit for 30 minutes or longer at a beam current of over 700 μA. Note: Set the service switch S1001 to call the service mode and press the single-colour key on the process remote controller to get the green-only screen. * Each time the single-colour key is pressed, the screen colour changes as follows. <pre> graph LR Green-only[Green-only screen] --> Blue-only[Blue-only screen] Blue-only --> Red-only[Red-only screen] Red-only --> Single-colour[Single-colour screen cleared] Single-colour --> Green-only </pre>	 <i>Fig. 5-1</i>  <i>Fig. 5-2</i> Rank "A" (on the right of the CRT)  <i>Fig. 5-3</i> Rank "A" (on the left of the CRT) * Whether in the service mode or not, hold down the single-colour key for 1 second or longer and the service mode is called. The TEXT key or the R.G.Cy key may be used instead to provide the single-colour screens.

CONVERGENCE ADJUSTMENT

No.	Adjusting point	Adjusting procedure/conditions	Waveform and others
1	Convergence adjustment (to be done after the purity adjustment)	- Receive the Crosshatch Pattern signal. - Using the remote controller, call the Normal mode. STATIC CONVERGENCE - Turn the 4-pole magnet to a proper opening angle in order to superimpose the blue and red colours. - Turn the 6-pole magnet to a proper opening angle in order to superimpose the green colour over the blue and red colours. DYNAMIC CONVERGENCE - Adjust the convergence on the fringes of the screen in the following steps. <i>Fig. 6-1</i>: Drive the wedge at point "a" and swing the deflection coil upward. <i>Fig. 6-2</i>: Drive the wedges at points "b" and "c" and swing the deflection coil downward. <i>Fig. 6-3</i>: Drive the "c" wedge deeper and swing the deflection coil rightward. <i>Fig. 6-4</i>: Drive the "b" wedge deeper and swing the deflection coil leftward. - Fix all the wedges on the cathode ray tube and apply glass tape over them. - Apply lacquer to the deflection yoke lock screw, magnet unit (purity, 4-pole and 6-pole magnets), and magnet unit lock screw. Finally receive the red-only and blue-only signals and make sure there is no other colour mixed on the screen.	 <i>Fig. 6-1</i>  <i>Fig. 6-2</i>  <i>Fig. 6-3</i>  <i>Fig. 6-4</i>  <i>Fig. 6-5</i>  <i>Fig. 6-6</i>

CRT CUT-OFF, SUB-CONTRAST, WHITE BALANCE AND SUB BRIGHTNES ADJUSTMENT

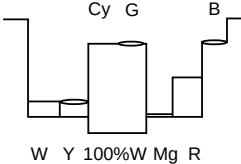
No.	Adjusting point	Adjusting procedure/conditions	Waveform and others
1	CRT cut-off adjustment: I²C bus control adjustment	1. Receive the Monoscope Pattern signal. 2. Set to the P-NORM mode. 3. Turn on the service switch and select the "Cut-off/background" mode. 4. Set the screen control to 0/10 position. 5. Press the "9" key on the remote controller to reach the horizontal centering mode. 6. Turn the screen control clockwise until the horizontal raster of the first glimmering colour becomes slightly visible. 7. Adjust the cut-off data of the other two colours until the horizontal raster becomes whitish. 8. Turn off the screen control (counterclockwise) until the horizontal raster disappears. Note: Before starting this adjustment, warm up the unit for 30 minutes or longer at a beam current of over 700 μA. 9. Press the "9" key on the remote controller to call the NORMAL mode.	* First of all, make sure that the R/G/B cut-off data are all initial values. Note: R CUT OFF UP "1" KEY DOWN "4" KEY G CUT OFF UP "2" KEY DOWN "5" KEY B CUT OFF UP "3" KEY DOWN "6" KEY The data can be turned up and down with the above keys.
2	Sub contrast, white balance, & sub brightness Service mode adjustment: I²C Bus Control Adjustment	1. Receive the Monoscope Pattern signal. 2. Set to the P-NORM mode. 3. Connect the DC milliammeter between TP602 (-) and TP603 (+). • Full Scale: 3.0mA range 4. Make sure the beam current be 1,100μA. 5. Adjust the "G-DRIVE" and "B-DRIVE" data to have a colour temperature of 12,300°K (white). 6. Adjust the contrast and brightness control to have a beam current of 200μA. If the colour temperature is not at 12,300°K, go back to step1 above. 7. Receive the Crosshatch Pattern signal. 8. Adjust the "SUB BRI" bus data, so that the block 1st to 3rd inside the window area will disappear.(black)	* 12,300°K X : 0.273 Y : 0.276 (with colour temperature meter CA-100 (MINOLTA).) Note: G-DRIVE UP "7" KEY DOWN "J--" KEY B-DRIVE UP "8" KEY DOWN "0" KEY The data can be turned up and down with the above keys.  Make sure all the 1st, 2nd and 3rd black portions are at the same black level.

No.	Adjusting point	Adjusting procedure/conditions	Waveform and others
3	Maximum beam current (check item)	1. Receive the Monoscope Pattern signal. 2. Set to the P-NORM mode. 3. Connect the DC ammeter between TP602 and TP603. • Ammeter's full-scale : 3 mA range • Ammeter's positive (+) lead : TP603 • Ammeter's negative (-) lead : TP602 4. Make sure the beam current is 1,100 $\pm$100 μA. Note: Before starting this adjustment, warm up the unit for 30 minutes or longer at a beam current of over 700 μA.	

HORIZONTAL AND VERTICAL CIRCUIT ADJUSTMENT

No.	Adjusting point	Adjusting procedure/conditions	Waveform and others
1	V-AMP 50 V-LINEARITY - 50 Hz V-S CORRECTION - 50 Hz V-SHIFT 50 (V-CENTER) H-SHIFT (50) (H-CENTER)	1. Adjust the overscan to 9% typical. 1. Adjust to get the best linearity. 1. Adjust the proper condition. 1. Align the screen center with the CRT's geometrical center (E-5). 1. Align the screen center with the CRT's geometrical center (E-5). Note: For the V-AMP 60, V-LINEARITY 60, V-S CORRECTION 60, V-SHIFT 60 and H-SHIFT 60 adjustments, their corrected data are automatically entered when the corresponding 50 Hz mode adjustments are made.	The selected channels in parentheses have the following signals. (E-2): crosshatch pattern (50 Hz) signal (E-5): monoscope pattern (50 Hz) signal
2	Focus adjustment	1. Receive the Monoscope Pattern signal. 2. Set to the P-NORM mode. 3. Adjust the focus control so that the screen be in best focusing.	

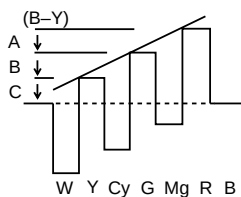
PAL CHROMA ADJUSTMENT

No.	Adjusting point	Adjusting procedure/conditions	Waveform and others
1	Sub-colour adjustment: I²C bus adjustment	1. Receive the PAL Colour Bar signal. 2. Set to the P-NORM mode. 3. Connect the oscilloscope to TP852 (RED cathode). (Use a 10 : 1 probe.) • Range : 2 V/div. • Sweep time : 20 μsec/div. 4. Using the remote controller, call the sub-colour adjustment mode. Adjust the sub-colour data so that the 75% white and red portions of the PAL colour bar be at the same level. See Fig. 7. 5. Clear the adjustment mode.	 Fig. 7

PROTECTOR PERFORMANCE CHECK

No.	Adjusting point	Adjusting procedure/conditions	Waveform and others
1	Beam protector	1. Receive the Monoscope Pattern signal. 2. Set the contrast control to maximum. 3. Set the brightness control to maximum. 4. Make a short-circuit between the collector and emitter of Q851, Q852 or Q853 and make sure that the protector is activated and the stand-by mode is called.	
2	High-voltage protector	1. Receive the Monoscope Pattern signal. 2. Connect the bias box to the cathode (R635 side) of D607. 3. Adjust the bias box voltage to 18 V and make sure that the protector is not activated. 4. Adjust the bias box voltage to 27 V and make sure that the protector is not activated.	
3	Other protectors	1. In checking the performance of other protectors — for example, the one against shorting of smoothing electrolytic capacitor of +B line —, pay attention not to damage or deteriorate any related element.	

NTSC CHROMA ADJUSTMENT

No.	Adjusting point	Adjusting procedure/conditions	Waveform and others
1	Sub-tint adjustment: I²C bus adjustment	1. Receive the NTSC 3.58 Colour Bar signal in the A/V mode. 2. Connect the oscilloscope to pin (36) of IC801(B-Y). • Range : 20 mV/div. • Sweep time : 20 μsec/div. (Use a 10 : 1 probe.) 3. Adjust the sub-tint data to obtain the waveform as shown in Fig. 8. 4. Clear the adjustment mode.	 Fig. 8 A=B=C

A/V INPUT AND OUTPUT CHECK

No.	Adjusting point	Adjusting procedure/conditions	Waveform and others
1	Video and audio output check	1. Receive the Colour Bar (100% white colour bar, 400 Hz, 100% modulation audio) signal. 2. Terminate the video output with a 75 ohm impedance. Make sure the output is as specified (1.0 Vp-p $\pm$3 dB). 3. Terminate the audio output with a 10k ohm impedance. Make sure the output is as specified (1.76 Vp-p $\pm$3 dB).	
2	Video and audio input check	1. Using the TV/AV key on the remote controller, make sure that the modes change in the order of TV, AV and TV again and that the video and audio outputs are according to the input and output terminals for each mode.	

FUNCTION CHECK (VIDEO AND AUDIO)

No.	Adjusting point	Adjusting procedure/conditions	Waveform and others
1	Contrast key	1. Receive the E-5CH signal. 2. Select the contrast on the P-MODE screen. 3. Check whether the Contrast is OK or not with Up/Down keys.	
2	Colour key	1. Receive the E-12CH signal. 2. Select the colour on the P-MODE screen. 3. Check whether the Colour is OK or not with Up/Down keys.	
3	Brightness key	1. Receive the E-5CH signal. 2. Select the brightness on the P-MODE screen. 3. Check whether the Brightness is OK or not with Up/Down keys.	
4	Tint key	1. Receive the NTSC colour bar signal. (A/V In Only) 2. Select the tint on the P-MODE screen. 3. The tint must be changeable toward green with the UP key and toward red with the DOWN key.	
5	PIC-Normal. key	1. Press the Normal key on the P-MODE screen to make sure all the displayed items are at normal settings. See below for the normal settings. ● Contrast : MAX ● Colour : CENTER ● Brightness : CENTER ● Tint : CENTER ● Sharpness : CENTER	* The contrast, colour, brightness, tint and sharpness settings are all normal when these items do not appear on the screen.
6	Sharpness key	1. Receive the E-5CH signal. 2. Select the sharpness on the P-MODE screen. 3. Check whether the Sharpness is OK or not with Up/Down keys.	

No.	Adjusting point	Adjusting procedure/conditions	Waveform and others
7	Channel sign display colour	1. The display colour of all the channel (0-99) signs must be green Under the AFT on mode.	
8	COLOUR SYSTEM key	1. Receive the NTSC 3.58 colour bar (A/V) signal. Using the COLOUR SYSTEM key, select a mode other than N3.58 and make sure the colour system does not work properly.	
9	Bilingual Key	1. Receive Bilingual sound signal, press the "Bilingual" key. Check whether there is change SOUND-1 to SOUND-2.	
10	Noise mute check	1. Receive the PAL Colour Bar signal. 2. Turn up the sound volume to maximum and make sure the sound is heard normally from the speakers. Then cut off the signal. 3. Make sure the sound muting functions. 4. Finally turn down the sound volume to minimum.	

MEMORY MAP (RH-iX3031CEZZ)

SUB ADDRESS	DATA								REMARKS	CRITERIA	FACTORY SETTING
	7	6	5	4	3	2	1	0			
000	Initialization judgment data "23"									Other than \$23	\$23
001	Initialization judgment data "20"									Other than \$20	\$20
002	Initialization judgment data "13"									Other than \$13	\$13
003	Initialization judgment data "61"									Other than \$61	\$61
004	PLL data (upper)								CH0		
005	PLL data (lower)								CH1		
006	PLL data (upper)								CH2		
007	PLL data (lower)								CH3		
008	PLL data (upper)								CH4		
009	PLL data (lower)								CH5		
00A	PLL data (upper)								CH6		
00B	PLL data (lower)								CH7		
00C	PLL data (upper)								CH8		
00D	PLL data (lower)								CH9		
00E	PLL data (upper)								CH10		
00F	PLL data (lower)								CH11		
010	PLL data (upper)								CH12		
011	PLL data (lower)								CH13		
012	PLL data (upper)								CH14		
013	PLL data (lower)								CH15		
014	PLL data (upper)								CH16		
015	PLL data (lower)								CH17		
016	PLL data (upper)								CH18		
017	PLL data (lower)								CH19		
018	PLL data (upper)								CH20		
019	PLL data (lower)								CH21		
01A	PLL data (upper)										
01B	PLL data (lower)										
01C	PLL data (upper)										
01D	PLL data (lower)										
01E	PLL data (upper)										
01F	PLL data (lower)										
020	PLL data (upper)										
021	PLL data (lower)										
022	PLL data (upper)										
023	PLL data (lower)										
024	PLL data (upper)										
025	PLL data (lower)										
026	PLL data (upper)										
027	PLL data (lower)										
028	PLL data (upper)										
029	PLL data (lower)										
02A	PLL data (upper)										
02B	PLL data (lower)										
02C	PLL data (upper)										
02D	PLL data (lower)										
02E	PLL data (upper)										
02F	PLL data (lower)										

SUB ADDRESS	DATA								REMARKS	CRITERIA	FACTORY SETTING
	7	6	5	4	3	2	1	0			
030	PLL data (upper)								CH22		
031	PLL data (lower)								CH23		
032	PLL data (upper)								CH24		
033	PLL data (lower)								CH25		
034	PLL data (upper)								CH26		
035	PLL data (lower)								CH27		
036	PLL data (upper)								CH28		
037	PLL data (lower)								CH29		
038	PLL data (upper)								CH30		
039	PLL data (lower)								CH31		
03A	PLL data (upper)								CH32		
03B	PLL data (lower)								CH33		
03C	PLL data (upper)								CH34		
03D	PLL data (lower)								CH35		
03E	PLL data (upper)								CH36		
03F	PLL data (lower)								CH37		
040	PLL data (upper)								CH38		
041	PLL data (lower)								CH39		
042	PLL data (upper)								CH40		
043	PLL data (lower)								CH41		
044	PLL data (upper)								CH42		
045	PLL data (lower)								CH43		
046	PLL data (upper)								CH44		
047	PLL data (lower)								CH45		
048	PLL data (upper)										
049	PLL data (lower)										
04A	PLL data (upper)										
04B	PLL data (lower)										
04C	PLL data (upper)										
04D	PLL data (lower)										
04E	PLL data (upper)										
04F	PLL data (lower)										
050	PLL data (upper)										
051	PLL data (lower)										
052	PLL data (upper)										
053	PLL data (lower)										
054	PLL data (upper)										
055	PLL data (lower)										
056	PLL data (upper)										
057	PLL data (lower)										
058	PLL data (upper)										
059	PLL data (lower)										
05A	PLL data (upper)										
05B	PLL data (lower)										
05C	PLL data (upper)										
05D	PLL data (lower)										
05E	PLL data (upper)										
05F	PLL data (lower)										

SUB ADDRESS	DATA								REMARKS	CRITERIA	FACTORY SETTING
	7	6	5	4	3	2	1	0			
060	PLL data (upper)								CH46		
061	PLL data (lower)										
062	PLL data (upper)								CH47		
063	PLL data (lower)										
064	PLL data (upper)								CH48		
065	PLL data (lower)										
066	PLL data (upper)								CH49		
067	PLL data (lower)										
068	PLL data (upper)								CH50		
069	PLL data (lower)										
06A	PLL data (upper)								CH51		
06B	PLL data (lower)										
06C	PLL data (upper)								CH52		
06D	PLL data (lower)										
06E	PLL data (upper)								CH53		
06F	PLL data (lower)										
070	PLL data (upper)								CH54		
071	PLL data (lower)										
072	PLL data (upper)								CH55		
073	PLL data (lower)										
074	PLL data (upper)								CH56		
075	PLL data (lower)										
076	PLL data (upper)								CH57		
077	PLL data (lower)										
078	PLL data (upper)								CH58		
079	PLL data (lower)										
07A	PLL data (upper)								CH59		
07B	PLL data (lower)										
07C	PLL data (upper)								CH60		
07D	PLL data (lower)										
07E	PLL data (upper)								CH61		
07F	PLL data (lower)										
080	PLL data (upper)								CH62		
081	PLL data (lower)										
082	PLL data (upper)								CH63		
083	PLL data (lower)										
084	PLL data (upper)								CH64		
085	PLL data (lower)										
086	PLL data (upper)								CH65		
087	PLL data (lower)										
088	PLL data (upper)								CH66		
089	PLL data (lower)										
08A	PLL data (upper)								CH67		
08B	PLL data (lower)										
08C	PLL data (upper)								CH68		
08D	PLL data (lower)										
08E	PLL data (upper)								CH69		
08F	PLL data (lower)										

SUB ADDRESS	DATA								REMARKS	CRITERIA	FACTORY SETTING
	7	6	5	4	3	2	1	0			
090	PLL data (upper)								CH70		
091	PLL data (lower)										
092	PLL data (upper)								CH71		
093	PLL data (lower)										
094	PLL data (upper)								CH72		
095	PLL data (lower)										
096	PLL data (upper)								CH73		
097	PLL data (lower)										
098	PLL data (upper)								CH74		
099	PLL data (lower)										
09A	PLL data (upper)								CH75		
09B	PLL data (lower)										
09C	PLL data (upper)								CH76		
09D	PLL data (lower)										
09E	PLL data (upper)								CH77		
09F	PLL data (lower)										
0A0	PLL data (upper)								CH78		
0A1	PLL data (lower)										
0A2	PLL data (upper)								CH79		
0A3	PLL data (lower)										
0A4	PLL data (upper)								CH80		
0A5	PLL data (lower)										
0A6	PLL data (upper)								CH81		
0A7	PLL data (lower)										
0A8	PLL data (upper)								CH82		
0A9	PLL data (lower)										
0AA	PLL data (upper)								CH83		
0AB	PLL data (lower)										
0AC	PLL data (upper)								CH84		
0AD	PLL data (lower)										
0AE	PLL data (upper)								CH85		
0AF	PLL data (lower)										
0B0	PLL data (upper)								CH86		
0B1	PLL data (lower)										
0B2	PLL data (upper)								CH87		
0B3	PLL data (lower)										
0B4	PLL data (upper)								CH88		
0B5	PLL data (lower)										
0B6	PLL data (upper)								CH89		
0B7	PLL data (lower)										
0B8	PLL data (upper)								CH90		
0B9	PLL data (lower)										
0BA	PLL data (upper)								CH91		
0BB	PLL data (lower)										
0BC	PLL data (upper)								CH92		
0BD	PLL data (lower)										
0BE	PLL data (upper)								CH93		
0BF	PLL data (lower)										

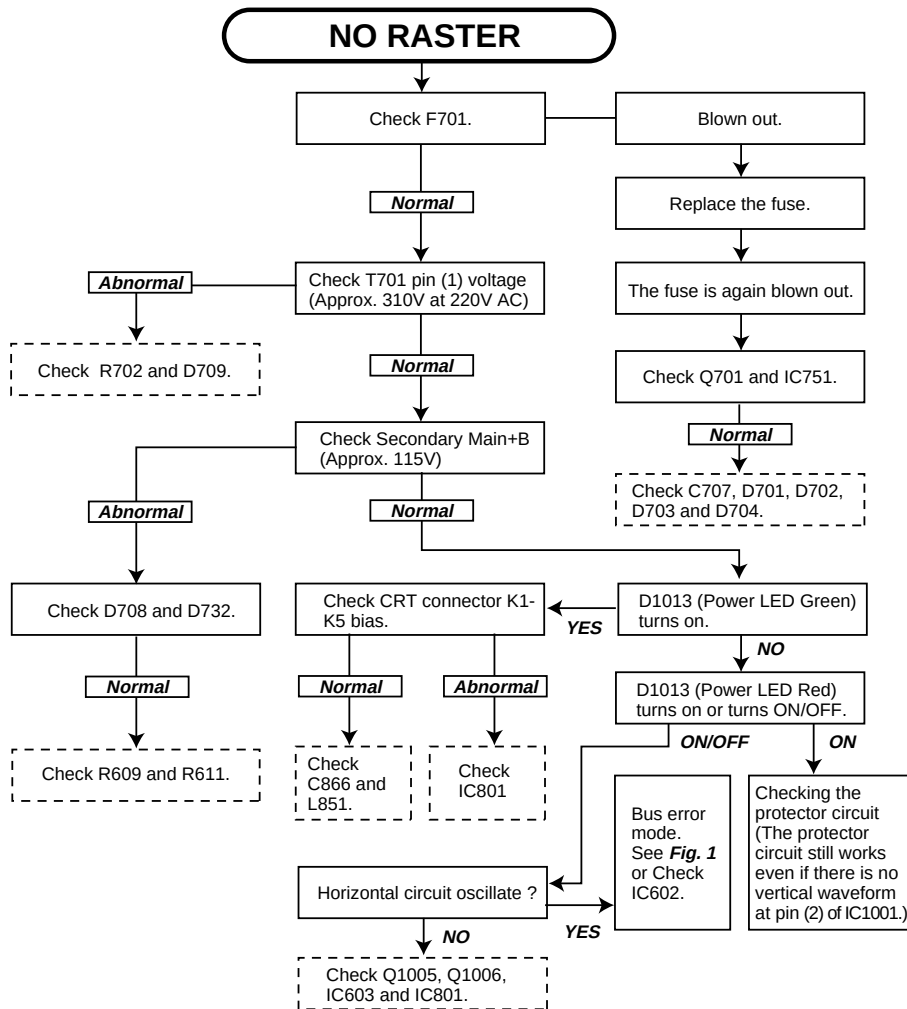
SUB ADDRESS	DATA								REMARKS	CRITERIA	FACTORY SETTING
	7	6	5	4	3	2	1	0			
0C0	PLL data (upper)								CH94		
0C1	PLL data (lower)										
0C2	PLL data (upper)								CH95		
0C3	PLL data (lower)										
0C4	PLL data (upper)								CH96		
0C5	PLL data (lower)										
0C6	PLL data (upper)								CH97		
0C7	PLL data (lower)										
0C8	PLL data (upper)								CH98		
0C9	PLL data (lower)										
0CA	PLL data (upper)								CH99		
0CB	PLL data (lower)										
0CC	POWER	TV/AV									80
0CD	BLUE BACKGROUND				One-digit/two-digit				OFF/ ·	Factory-set at ON	AA
0CE	LANGUAGE										01
0CF	LAST POSITION										01
0D0	LAST CONTRAST										3F
0D1	LAST COLOUR										1F
0D2	LAST BRIGHTNESS										1F
0D3	LAST TINT										1F
0D4	LAST SHARPNESS										1F
0D5	LAST VOLUME										00
0D6	LAST SERVICE MODE										00
0D7											
0D8											
0D9											
0DA											
0DB											
0DC											
0DD											
0DE											
0DF											
0E0	CH7	CH5	CH5	CH4	CH3	CH2	CH1	CH0	AFT 0 : OFF 1 : ON	AFT OFF	FF
0E1	CH15	CH14	CH13	CH12	CH11	CH10	CH9	CH8			
0E2	CH23	CH22	CH21	CH20	CH19	CH18	CH17	CH16			
0E3	CH31	CH30	CH29	CH28	CH27	CH26	CH25	CH24			
0E4	CH39	CH38	CH37	CH36	CH35	CH34	CH33	CH32			
0E5	CH47	CH46	CH45	CH44	CH43	CH42	CH41	CH40			
0E6	CH55	CH54	CH53	CH52	CH51	CH50	CH49	CH48			
0E7	CH63	CH62	CH61	CH60	CH59	CH58	CH57	CH56			
0E8	CH71	CH70	CH69	CH68	CH67	CH66	CH65	CH64			
0E9	CH79	CH78	CH77	CH76	CH75	CH74	CH73	CH72			
0EA	CH87	CH86	CH85	CH84	CH83	CH82	CH81	CH80			
0EB	CH95	CH94	CH93	CH92	CH91	CH90	CH89	CH88			
0EC					CH99	CH98	CH97	CH96			
0ED											
0EE											
0EF											

SUB ADDRESS	DATA								REMARKS	CRITERIA	FACTORY SETTING
	7	6	5	4	3	2	1	0			
0F0	CH7	CH5	CH5	CH4	CH3	CH2	CH1	CH0	SKIP 0 : OFF 1 : ON	SKIP ON	00
0F1	CH15	CH5	CH5	CH4	CH3	CH2	CH1	CH0			
0F2	CH23	CH22	CH21	CH20	CH19	CH18	CH17	CH16			
0F3	CH31	CH30	CH29	CH28	CH27	CH26	CH25	CH24			
0F4	CH39	CH38	CH37	CH36	CH35	CH34	CH33	CH32			
0F5	CH47	CH46	CH45	CH44	CH43	CH42	CH41	CH40			
0F6	CH55	CH54	CH53	CH52	CH51	CH50	CH49	CH48			
0F7	CH63	CH62	CH61	CH60	CH59	CH58	CH57	CH56			
0F8	CH71	CH70	CH69	CH68	CH67	CH66	CH65	CH64			
0F9	CH79	CH78	CH77	CH76	CH75	CH74	CH73	CH72			
0FA	CH87	CH86	CH85	CH84	CH83	CH82	CH81	CH80			
0FB	CH95	CH94	CH93	CH92	CH91	CH90	CH89	CH88			
0FC					CH99	CH98	CH97	CH96			
0FD											
0FE											
0FF											

SUB ADDRESS	DATA								REMARKS	CRITERIA	FACTORY SETTING
	7	6	5	4	3	2	1	0			
164	AUDIO SYSTEM (1)				VIDEO SYSTEM (2)				AUTO		00
165											
166											
167											
168											
169											
16A											
16B											
16C											
16D											
16E											
16F											
170	CUT OFF (R)								0		00
171	CUT OFF (G)								0		00
172	CUT OFF (B)								0		00
173	DRIVE (G)								127		7F
174	DRIVE (R)								127		7F
175				TV H-CENTER (50Hz)				7		07	
176				TV H-CENTER (60Hz)				12		0C	
177	H BLK PHASE						V-CENTER 50		0,5		05
178	V-AMPLITUDE 50								58		74
179	V S-CORRECTION 50								67		86
17A	V-LINEALITY 50								16		80
17B	Y SUB CONTRAST								18		12
17C	SUB COLOUR								110		6E
17D	SUB BRIGHT								127		7F
17E	SUB TINT								70		46
17F	SUB SHARPNESS								28		1C
180	DELAY PAL (AV)				DELAY PAL (TV)				2,2		22
181	DELAY SECAM (AV)				DELAY SECAM (TV)				4,4		44
182	DELAY NTSC (AV)				DELAY NTSC (TV)				2,2		22
183	DELAY B/W (AV)				DELAY B/W (TV)				2,2		22
184	R-Y BLACK OFFSET				B-Y BLACK OFFSET				10,6		A6
185					Y-MUTE	AV2			OFF/ON		04
186								V-CENTER 60	2		02
187	V-AMPLITUDE 60								59		76
188	V S-CORRECTION 60								74		E8
189	V-LINEARITY 60								14		70
18A			WIDE V-BLK START PHASE 50					58		3A	
18B			WIDE V-BLK START PHASE 60					60		3C	
18C		WIDE V-BLK STOP PHASE 50					25		19		
18D		WIDE V-BLK STOP PHASE 60					20		14		
18E	SUB CONTRAST							255		FF	
18F											

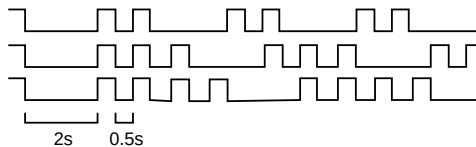
SUB ADDRESS	DATA								REMARKS	CRITERIA	FACTORY SETTING
	7	6	5	4	3	2	1	0			
190	P/N KIL	NOISE DET							0		00
191	RGB CONTRAST								255		FF
192	Y γ	WPL SW							0,0		00
193						AFC MODE			1		02
194	B.S OFF				P/N GP	CL-L SW			0,0,1		00
195	CLL LEVEL		PN CD ATT						2,2		A0
196	BLACK STRETCH OFFSET			DC TRAN RATE			APA-CON F0		7,2,2		EA
197	ABL POINT			ABL GAIN					0,1		04
198						COINCIDENT			0		01*
199	NOISE DET LEVEL								0		00
19A	N COMB								1		80
19B	S-FIELD	SCD ATT	DEMP F0	S GP	V-ID SW	S KIL	BELL F0				21
19C											
19D											
19E											
19F											
1A0	TOF Q (AV)		TOF F0 (AV)		TOF Q (TV)		TOF F0 (TV)		PAL		8B
1A1	TOF Q (AV)		TOF F0 (AV)		TOF Q (TV)		TOF F0 (TV)		SECAM		8B
1A2	TOF Q (AV)		TOF F0 (AV)		TOF Q (TV)		TOF F0 (TV)		N443		8B
1A3	TOF Q (AV)		TOF F0 (AV)		TOF Q (TV)		TOF F0 (TV)		N358		8B
1A4	C-TRAP Q (AV)		C-TRAP F0 (AV)		C-TRAP Q (TV)		C-TRAP F0 (TV)		PAL		66
1A5	C-TRAP Q (AV)		C-TRAP F0 (AV)		C-TRAP Q (TV)		C-TRAP F0 (TV)		SECAM		66
1A6	C-TRAP Q (AV)		C-TRAP F0 (AV)		C-TRAP Q (TV)		C-TRAP F0 (TV)		N443		66
1A7	C-TRAP Q (AV)		C-TRAP F0 (AV)		C-TRAP Q (TV)		C-TRAP F0 (TV)		N358		66
1A8	N358 SHARPNESS								10		0A
1A9	N358 TR								ON		00
1AA	FAVORITE CH (RED)								10CH		0A
1AB	FAVORITE CH (GREEN)								20CH		14
1AC	FAVORITE CH (YELLOW)								30CH		1E
1AD	FAVORITE CH (CYAN)								40CH		28
1AE											
1AF											
1B0											
1B1											
1B2											
1B3											
1B4											
1B5											
1B6											
1B7											
1B8											
1B9											
1BA											
1BB											
1BC											
1BD											
1BE											
1BF											

TROUBLE SHOOTING TABLE



If a bus error happens, the LED RED (pin 3) indicator starts flashing and the power is turned off. The power key is still effective.

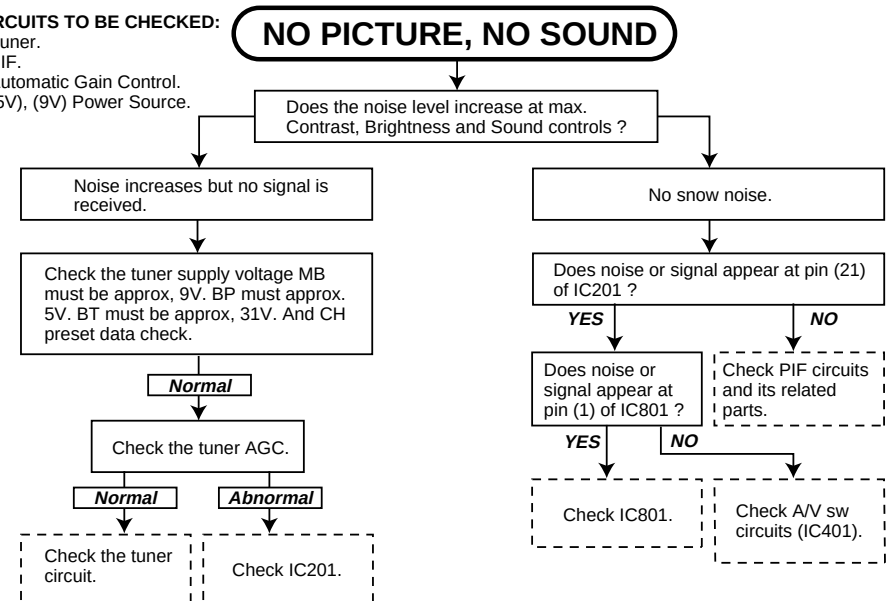
Fig. 1
IC1003
EEPROM (ST24C04)
IC801
V/C/J (TB1226DN)
TU201
PLL (N0004KJ)



TROUBLE SHOOTING TABLE (Continued)

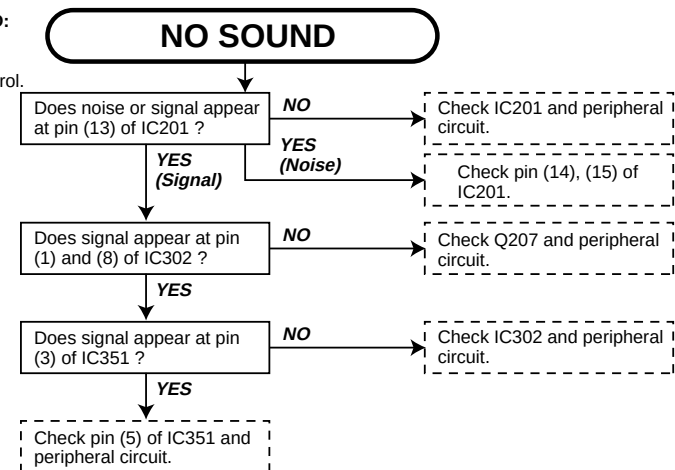
CIRCUITS TO BE CHECKED:

- Tuner.
- PIF.
- Automatic Gain Control.
- (5V), (9V) Power Source.



CIRCUITS TO BE CHECKED:

- SIF Amplifier Circuit.
- Sound Detector Circuit.
- Sound Switch and Att. Control.
- Audio Output Circuit.



TROUBLE SHOOTING TABLE (Continued)

NEITHER VERTICAL NOR HORIZONTAL SYNCHRONIZATION

CIRCUIT TO BE CHECKED:

- Sync. Separator Circuit.

Check IC801 and Q401.

DEFECTIVE VERTICAL AMP. AND VERTICAL LINEARITY

Readjust vertical size.
(Bas Data)

Vertical size is abnormal.

Check R510, C513, C514
and C501.

Vertical linearity is abnormal.

Check C515, C519, R511,
R513 and R514.

NO VERTICAL SCAN

Check IC501 bias.

Normal

Check C506.

Abnormal

Check IC501.

TROUBLE SHOOTING TABLE (Continued)

NO SPECIFIC COLOUR

Is some colour produced in
B/W broadcast reception ?

NO

YES

Check IC801, R809, R810,
R811, D801, D802, D803,
Q801, Q802, Q803, Q804
and Q805.

YES

Is the white balance properly
adjusted ?

NO

Readjust the white balance.

The picture colour is cyan.

Check Q851 and its
adjacent circuits.

The picture colour is magenta.

Check Q852 and its
adjacent circuits.

The picture colour is yellow.

Check Q853 and its
adjacent circuits.NO SPECIFIC COLOUR
"PAL"/"NTSC"/"SECAM"
(NO COLOUR SYNCHRONIZATION)

"PAL"/"NTSC"

"SECAM"

Check IC801 and bias
control circuit.

Normal

Check X801, C810, C815,
C816 and R814.

Normal

Check C901 and pin (31) of
IC1001.

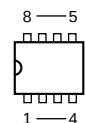
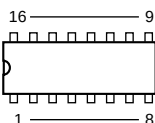
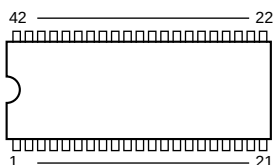
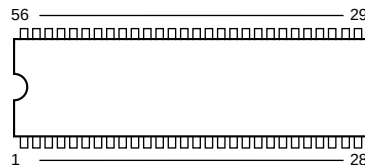
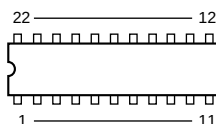
CHASSIS LAYOUT

H						
G						
F						
E						
D						
C						
B						
A						
	1	2	3	4	5	6

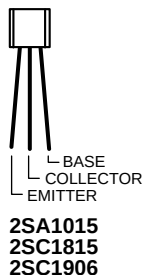
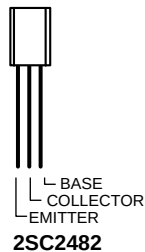
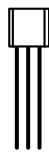
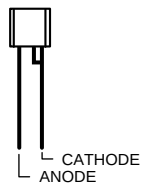
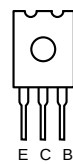
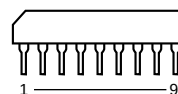
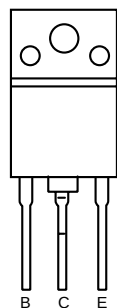
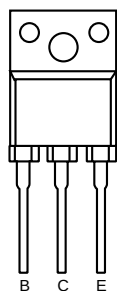
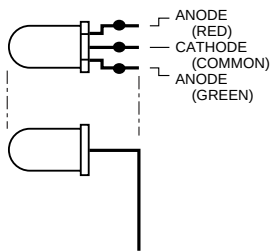
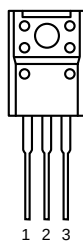
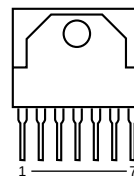
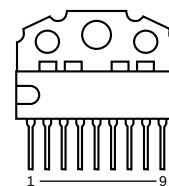
21CT-25
as is

SOLID STATE DEVICE BASE DIAGRAM

TOP VIEW

**ST24C04****iX1779CE****iX3031****TB1226****BA7357S**

SIDE VIEW

**2SA1015
2SC1815
2SC1906****2SC2482****KiA7045P
TA78L09****UPC78L05****iX0037CE****2SC3789****TA7348P****2SD2586****2SD1884****PX0003PE****KA7809
KA7805****iX0640CE****TDA7056A**

DESCRIPTION OF SCHEMATIC DIAGRAM

SAFETY NOTES:

- 1. DISCONNECT THE AC PLUG FROM THE AC OUTLET BEFORE REPLACING PARTS.
- 2. SEMICONDUCTOR HEAT SINKS SHOULD BE REGARDED AS POTENTIAL SHOCK HAZARDS WHEN THE CHASSIS IS OPERATING.

IMPORTANT SAFETY NOTICE:

PARTS MARKED WITH "A" () ARE IMPORTANT FOR MAINTAINING THE SAFETY OF THE SET. BE SURE TO REPLACE THESE PARTS WITH SPECIFIED ONES FOR MAINTAINING THE SAFETY AND PERFORMANCE OF THE SET.

SERVICE PRECAUTION:

THE AREA ENCLOSED BY THIS LINE () IS DIRECTLY CONNECTED WITH AC MAINS VOLTAGE. WHEN SERVICING THE AREA, CONNECT AN ISOLATING TRANSFORMER BETWEEN TV RECEIVER AND AC LINE TO ELIMINATE HAZARD OF ELECTRIC SHOCK.

NOTES:

- 1. The unit of resistance "ohm" is omitted. (K = 1000 ohms, M = Meg ohm).
- 2. All resistors are 1/8 watt, unless otherwise noted.
- 3. All capacitors are μF , unless otherwise noted. (P = $\mu\mu F$).
- 4. All capacitors are 50V, unless otherwise noted.

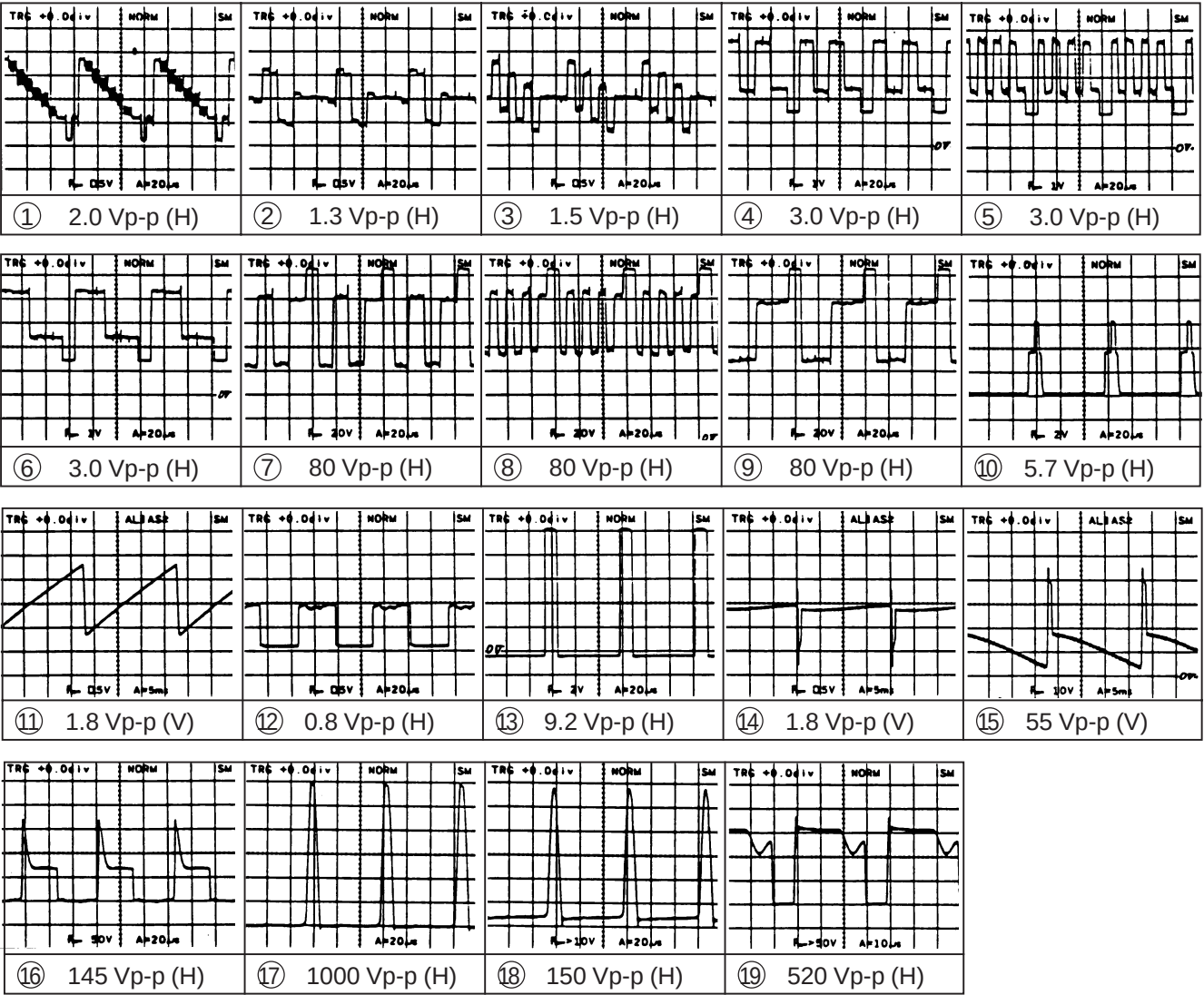
VOLTAGE MEASUREMENT CONDITIONS:

- 1. Voltage in parenthesis measured with no Signal.
- 2. Voltages without parenthesis measured with 3mV B & W or Colour-Signal.
- 3. All the voltages in each point are measured with VTVM.

WAVEFORM MEASUREMENT CONDITIONS:

- 1. Colour bar generator signal of 1.5V peak to peak applied at Base of Video Buffer Amp. Q202.
- 2. Approximately 4.0 V AGC bias.

WAVEFORMS



Tuner

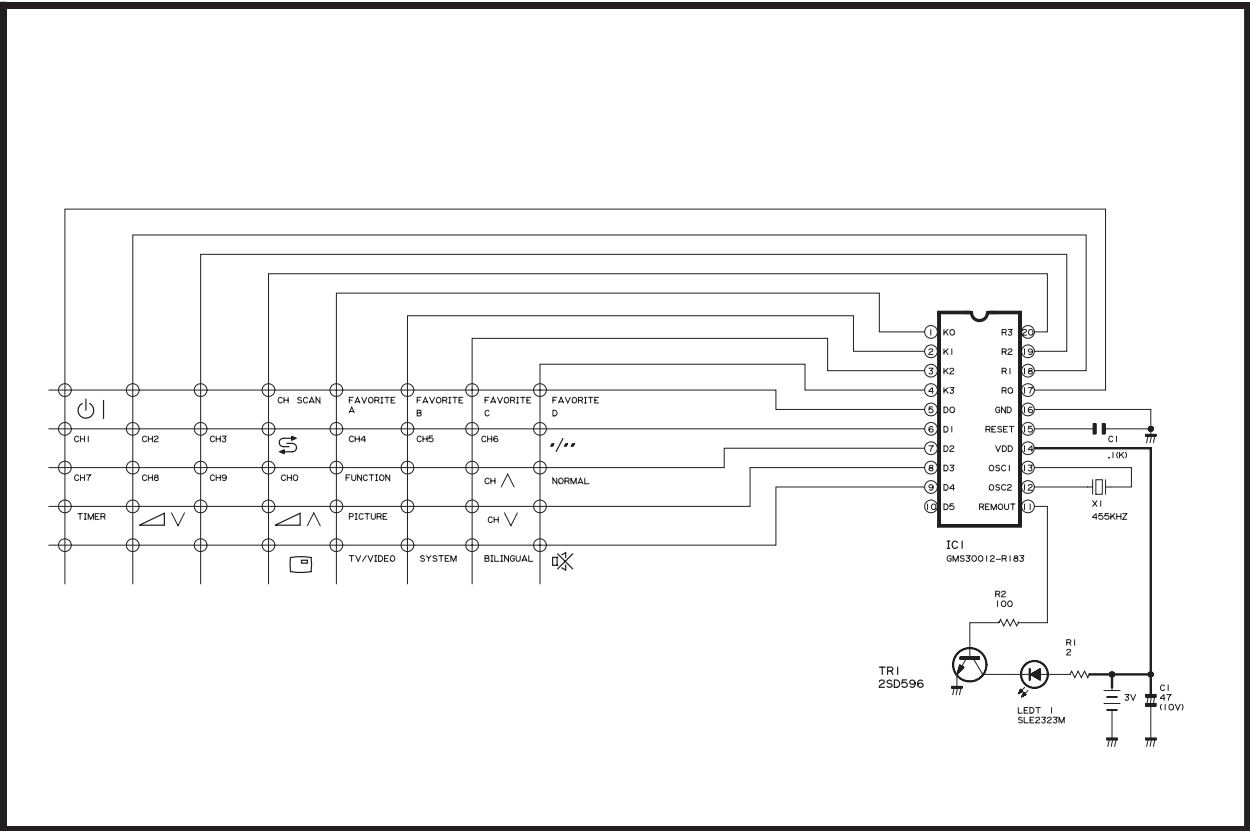
NOTE: The parts here shown are supplied as an assembly but not independently.

RTUNQ0004KJZZ

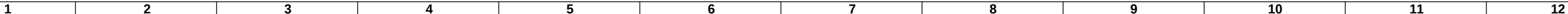
Infrared Remote Control Unit

NOTE: The parts here shown are supplied as an assembly but not independently.

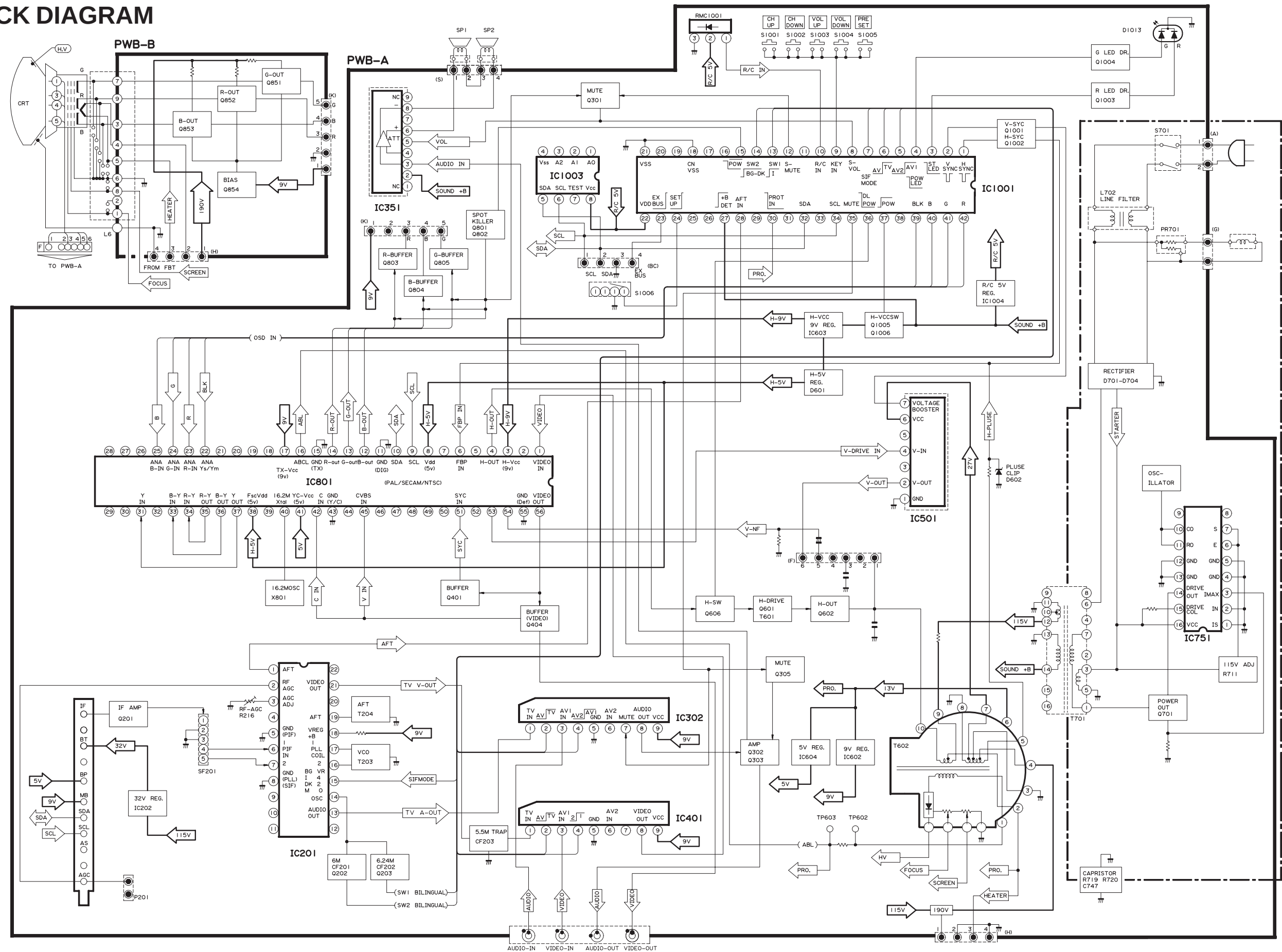
RRMCG0018PESA



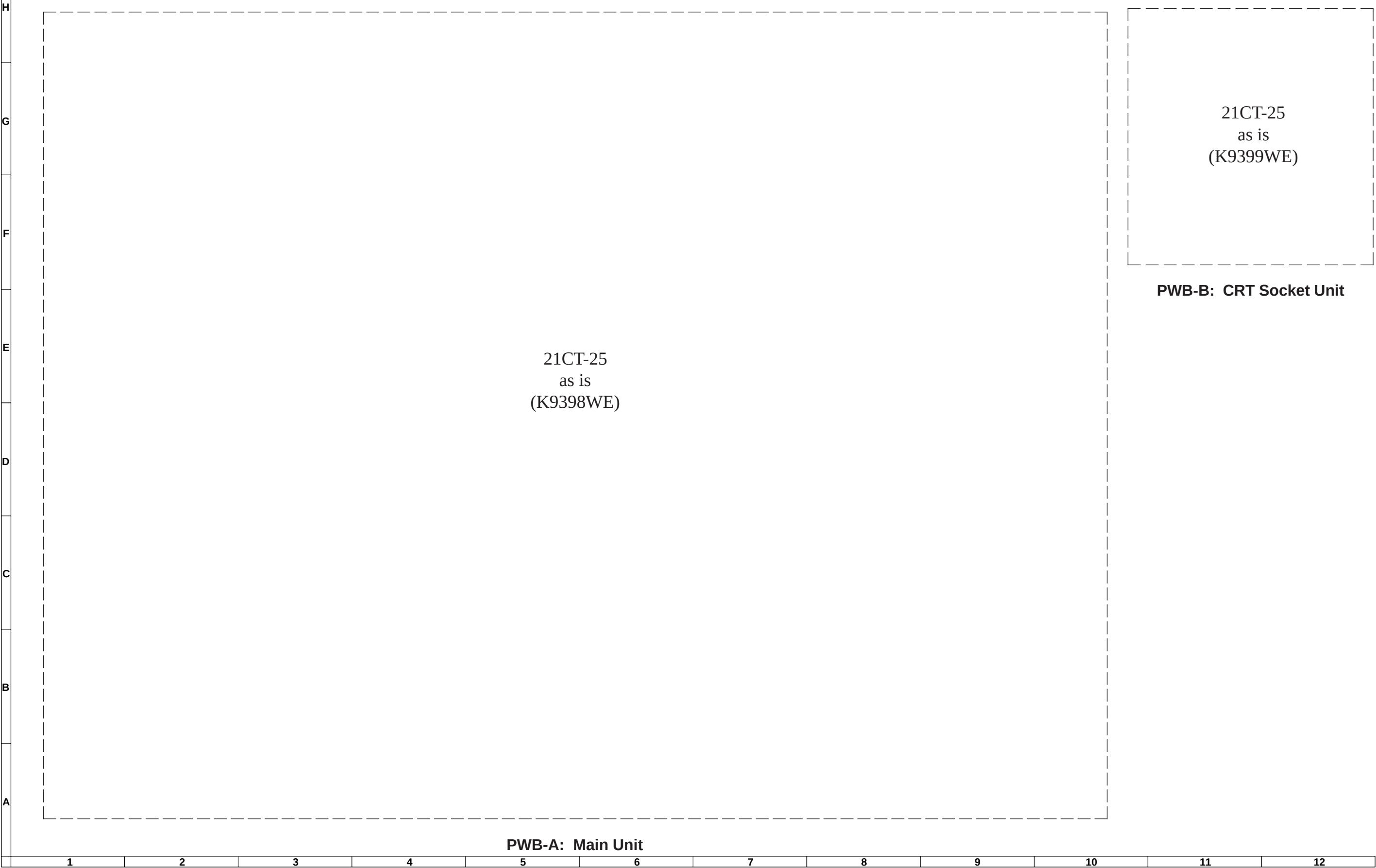
H
G
F
E
D
C
B
A



BLOCK DIAGRAM



PRINTED WIRING BOARD ASSEMBLIES
(All the PWBs here are shown as viewed from their wiring sides)



PARTS LIST

PARTS REPLACEMENT

Replacement parts which have these special safety characteristics identified in this manual: electrical components having such features are identified by "△" in the Replacement Parts Lists.

The use of a substitute replacement part which does not have the same safety characteristics as the factory recommended replacement parts shown in this service manual may create shock, fire or other hazards.

"HOW TO ORDER REPLACEMENT PARTS"

To have your order filled promptly and correctly, please furnish the following informations.

- | | |
|-----------------|----------------|
| 1. MODEL NUMBER | 2. REF. NO. |
| 3. PART NO. | 4. DESCRIPTION |

MARK ★ : SPARE PARTS-DELIVERY SECTION.

Ref. No.	Part No.	★	Description	Code
----------	----------	---	-------------	------

PICTURE TUBE

△ V1	VB48LGS10X/*S	Picture Tube	
△ L708	RCiLG0002KJZZ	Degaussing(ADG) Coil	
△ DY1	RCiLH1837CEZZ	Deflection Yoke	
	LHLDW0003PEKZ	J ADG Coil Holder	AB
	MSPRT0001PEFJ	J CRT Spring	AC
	PMAGF3041CEZZ	R Purity Magnet	AG
	PSPAG0004KJZZ	Wedge, Rubber, x3	
	QEARC2006CEZZ	Grounding Strap	

PRINTED WIRING BOARD ASSEMBLIES (NOT REPLACEMENT ITEM)

PWB-A	DUNTK9398WET4	— MAIN Unit	—
PWB-B	DUNTK9399WET4	— CRT Unit	—

Ref. No.	Part No.	★	Description	Code
----------	----------	---	-------------	------

PWB-A: DUNTK9398WET4 MAIN UNIT

TUNER

NOTE: THE PARTS HERE SHOWN ARE SUPPLIED AS AN ASSEMBLY BUT NOT INDEPENDENTLY.

△ TU201 RTUNQ0004KJZZ R Tuner

INTEGRATED CIRCUITS

IC201	VHiBA7357S/-1	R BA7357S	AR
IC202	RH-iX0037CEZZ	R UPC574J	AF
IC302	VHiTA7348P/-1	J TA7348P	AK
IC351	VHiTDA7056A-1	R TDA7056A	AP
IC401	VHiTA7348P/-1	J TA7348P	AK
IC501	VHiLA7830//-1	R LA7830	AH
IC602	VHiKA7809Pi-1	J KA7809PI	AE
IC603	VHiTA78L09S-1	R TA78L09S	AC
IC604	VHiKA7805Pi-1	J KA7805PI	AE
△ IC751	RH-iX1779CEZZ	R TEA2261	AR
IC801	VHiTB1226DN-1	R TB1226DN	BB
IC1001	RH-iX3031CEZZ	R M37221M4-110SP	AW
IC1002	VHiKiA7045P-1	R KIA7045P	AD
IC1003	VHiST24C04/-1	R ST24C04CB6	AQ
IC1004	VHiUPC78L05-4	R UPC78L05J	AD

TRANSISTORS

Q201	VS2SC1906//1E	R 2SC1906	AC
Q202	VS2SC1906//1E	R 2SC1906	AC
Q203	VS2SC1906//1E	R 2SC1906	AC
Q205	VS2SC1815GW-1	R 2SC1815GW	AB
Q207	VS2SC1815GW-1	R 2SC1815GW	AB
Q301	VS2SC1815GW-1	R 2SC1815GW	AB
Q302	VS2SC1815GW-1	R 2SC1815GW	AB
Q303	VS2SC1815GW-1	R 2SC1815GW	AB
Q305	VS2SC1815GW-1	R 2SC1815GW	AB
Q401	VS2SA1015Y/1E	R 2SA1015Y	AC
Q404	VS2SC1815GW-1	R 2SC1815GW	AB
Q405	VS2SA1015G/1E	R 2SA1015	AC
Q601	VS2SC2482//-1	R 2SC2482	AD
△ Q602	VS2SD2586//1E	R 2SD2586	AM
Q606	VS2SC1815GW-1	R 2SC1815GW	AB
Q607	VS2SC1815GW-1	R 2SC1815GW	AB
△ Q701	VS2SD1884//-1	R 2SD1884	AN
Q801	VS2SC1815GW-1	R 2SC1815GW	AB
Q802	VS2SA1015Y/1E	R 2SA1015Y	AC
Q803	VS2SA1015Y/1E	R 2SA1015Y	AC
Q804	VS2SA1015Y/1E	R 2SA1015Y	AC
Q805	VS2SA1015Y/1E	R 2SA1015Y	AC
Q1001	VS2SC1815GW-1	R 2SC1815GW	AB
Q1002	VS2SC1815GW-1	R 2SC1815GW	AB
Q1003	VS2SA1015Y/1E	R 2SA1015Y	AC
Q1004	VS2SA1015Y/1E	R 2SA1015Y	AC
Q1005	VS2SA1015Y/1E	R 2SA1015Y	AC
Q1006	VS2SC1815GW-1	R 2SC1815GW	AB

DIODES

D201	RH-DX0475CEZZ	R Diode	AB
------	---------------	---------	----

Ref. No.	Part No.	★	Description	Code
PWB-A: DUNTK9398WET4				
MAIN UNIT (Continued)				
D302	RH-DX0224CEZZ	R	Diode	AB
D303	RH-DX0475CEZZ	R	Diode	AB
D304	RH-DX0475CEZZ	R	Diode	AB
D305	RH-DX0475CEZZ	R	Diode	AB
D403	RH-DX0475CEZZ	R	Diode	AB
D404	RH-DX0475CEZZ	R	Diode	AB
D501	RH-DX0279CEZZ	R	Diode	AB
D502	RH-DX0127CEZZ	R	Diode	AC
D503	RH-EX0675GEZZ	R	Zener Diode, 33V	AB
D504	RH-EX0675GEZZ	R	Zener Diode, 33V	AB
D601	RH-EX0612GEZZ	R	Zener Diode, 5.1V	AA
D602	RH-EX0631GEZZ	R	Zener Diode, 9.1V	AA
D603	RH-DX0062CEZZ	R	Diode	AD
D604	RH-DX0279CEZZ	R	Diode	AB
D606	RH-DX0475CEZZ	R	Diode	AB
D607	RH-EX0799CEZZ	R	Zener Diode	AB
D611	RH-DX0475CEZZ	R	Diode	AB
D618	RH-DX0475CEZZ	R	Diode	AB
D619	RH-DX0475CEZZ	R	Diode	AB
D657	RH-EX0604GEZZ	R	Zener Diode, 3.9V	AB
△ D701	RH-DX0279CEZZ	R	Diode	AB
△ D702	RH-DX0279CEZZ	R	Diode	AB
△ D703	RH-DX0279CEZZ	R	Diode	AB
△ D704	RH-DX0279CEZZ	R	Diode	AB
△ D705	RH-DX0130CEZZ	R	Diode	AE
△ D706	RH-DX0130CEZZ	R	Diode	AE
△ D708	RH-EX0914CEZZ	R	Zener Diode, 3.9V	AD
△ D709	RH-DX0302CEZZ	R	Diode	AC
△ D710	RH-DX0027CEZZ	R	Diode	AE
D732	RH-DX0388CEZZ	R	Diode	AE
D733	RH-DX0302CEZZ	R	Diode	AC
D801	RH-DX0475CEZZ	R	Diode	AB
D802	RH-DX0475CEZZ	R	Diode	AB
D803	RH-DX0475CEZZ	R	Diode	AB
D804	RH-DX0475CEZZ	R	Diode	AB
D1003	RH-EX0619GEZZ	R	Zener Diode, 6.2V	AA
D1004	RH-EX0619GEZZ	R	Zener Diode, 6.2V	AA
D1008	RH-EX0619GEZZ	R	Zener Diode, 6.2V	AA
D1012	RH-EX0619GEZZ	R	Zener Diode, 6.2V	AA
D1013	RH-PX0003PEZZ	J	LED Red/Green	AF
D1014	RH-EX0619GEZZ	R	Zener Diode, 6.2V	AA
D1015	RH-EX0619GEZZ	R	Zener Diode, 6.2V	AA
D1018	RH-DX0475CEZZ	R	Diode	AB
D1019	RH-DX0475CEZZ	R	Diode	AB
D1020	RH-DX0475CEZZ	R	Diode	AB
D1021	RH-DX0475CEZZ	R	Diode	AB
D1026	RH-EX0619GEZZ	R	Zener Diode, 6.2V	AA
△ VA702	RH-VX0048CEZZ	R	Varistor	AE
PACKAGED CIRCUITS				
△ PR701	RMPTP0001PEZZ	J	Packaged Circuit	AN
X801	RCRSB0244CEZZ	R	Crystal, 16.2MHz	AH

Ref. No.	Part No.	★	Description	Code
COILS AND TRANSFORMERS				
CF201	RFILA0042CEZZ	R	Filter	AD
CF202	RFILA0095CEZZ	R	Filter	AE
CF203	RFILC0411CEZZ	R	Filter	AE
CF1001	RFILA0084CEZZ	R	Filter	AE
L201	VP-DF270K0000	R	Peaking 27μH	AB
L202	VP-DF270K0000	R	Peaking 27μH	AB
L203	VP-DF270K0000	R	Peaking 27μH	AB
L204	VP-XF1R0K0000	R	Peaking 1μH	AB
L206	VP-XF390K0000	R	Peaking 39μH	AB
L401	VP-CF101K0000	R	Peaking 100μH	AB
L602	RCiLP0224CEZZ	R	Peaking Coil	AE
L605	VP-DF101K0000	R	Peaking 100μH	AB
L609	VP-CF1R0M0000	R	Peaking 1μH	AB
L632	RCiLP0225CEZZ	R	Coil	AF
△ L702	RCiLF0105CEZZ	R	Coil	AP
△ L705	VP-CF3R3K0000	R	Peaking 3.3μH	AB
△ L712	VP-CF100K0000	R	Peaking 10μH	AB
L801	VP-DF101K0000	R	Peaking 100μH	AB
L802	VP-DF101K0000	R	Peaking 100μH	AB
L1001	VP-DF1R0K0000	R	Peaking 1μH	AB
SF201	RFILC0018PEZZ	J	SAW Filter	AL
T203	RCiLD0238CEZZ	R	VCO Coil	AE
T204	RCiLD0239CEZZ	R	AFT Coil	AE
△ T601	RTRNZ0026PEZZ	J	Transformer	AH
△ T602	RTRNF0147PEZZ	J	H-Volt Transformer	BC
△ T701	RTRNZ0120PEZZ	J	Transformer	BB
CONTROLS				
R216	RVR-M4169GEZZ	R	47k (B) RF-AGC	AB
△ R711	RVR-M4324CEZZ	R	220 (B) 115V Adj.	AC
CAPACITORS				
C201	VCEAGA1CW226M	R	22 16V Electrolytic	AB
C202	VCKYPA1HF103Z	R	0.01 50V Ceramic	AA
C203	VCKYPA1HF103Z	R	0.01 50V Ceramic	AA
C204	VCEAGA1CW107M	R	100 16V Electrolytic	AB
C205	VCEAGA1CW337M	R	330 16V Electrolytic	AC
C206	VCKYPA1HF103Z	R	0.01 50V Ceramic	AA
C207	VCEAGA1HW106M	R	10 50V Electrolytic	AC
C208	VCKYPA1HF103Z	R	0.01 50V Ceramic	AA
C209	VCKYPA1HF103Z	R	0.01 50V Ceramic	AA
C210	VCKYPA1HF103Z	R	0.01 50V Ceramic	AA
C211	VCKYPA1HF103Z	R	0.01 50V Ceramic	AA
C212	VCKYPA1HF103Z	R	0.01 50V Ceramic	AA
C213	VCFYFA1HA154J	R	0.15 50V Mylar	AC
C214	VCKYPA1HF103Z	R	0.01 50V Ceramic	AA
C215	VCEAGA1CW106M	R	10 16V Electrolytic	AA
C216	VCKYPA1HF103Z	R	0.01 50V Ceramic	AA
C217	VCKYPA1HF103Z	R	0.01 50V Ceramic	AA
C218	VCCCPA1HH150J	R	15p 50V Ceramic	AA
C219	VCCCPA1HH220J	R	22p 50V Ceramic	AA
C220	VCCCPA1HH101J	R	100p 50V Ceramic	AA
C221	VCFYHA1HA684J	R	0.68 50V Mylar	AD
C222	VCCCPA1HH120J	R	12p 50V Ceramic	AA
C223	RC-QZA104TAYK	R	0.1 50V Mylar	AB
C224	VCEAGA1CW476M	R	47 16V Electrolytic	AB

Ref. No.	Part No.	★	Description	Code	Ref. No.	Part No.	★	Description	Code		
PWB-A: DUNTK9398WET4					C504	VCCSPA2HL471K	R	470p	500V Ceramic	AB	
MAIN UNIT (Continued)					C505	RC-QZA104TAYK	R	0.1	50V Mylar	AB	
C225	VCKYPA1HF103Z	R	0.01	50V Ceramic	AA	C506	VCEAGA1EW108M	R	1000	25V Electrolytic	AD
C226	VCCCPA1HH180J	R	18p	50V Ceramic	AA	C507	VCEAGA1VW107M	R	100	35V Electrolytic	AC
C227	VCCCPA1HH180J	R	18p	50V Ceramic	AA	C509	RC-QZA104TAYK	R	0.1	50V Mylar	AB
C228	RC-QZA104TAYK	R	0.1	50V Mylar	AB	C510	VCEAGA1VW477M	R	470	35V Electrolytic	AD
C229	RC-QZA103TAYK	R	0.01	50V Mylar	AA	C511	VCKYPA2HB102K	R	1000p	500V Ceramic	AA
C231	VCEAGA1HW475M	R	4.7	50V Electrolytic	AB	C512	VCFYSA1HB824J	R	0.82	50V Mylar	AC
C232	VCKYPA1HF103Z	R	0.01	50V Ceramic	AA	C513	VCFYSA1HB824J	R	0.82	50V Mylar	AC
C233	VCEAGA1HW225M	R	2.2	50V Electrolytic	AB	C514	VCEAGA1HW105M	R	1	50V Electrolytic	AC
C301	VCEAGA1CW477M	R	470	16V Electrolytic	AC	C515	VCEACA1HC105M	R	1	50V Electrolytic	AC
C302	RC-QZA104TAYK	R	0.1	50V Mylar	AB	C518	VCQYTA1HM392K	R	3900p	50V Mylar	AB
C303	VCFYFA1HA474J	R	0.47	50V Mylar	AC	C519	VCQYTA1HM472K	R	4700p	50V Mylar	AB
C304	RC-QZA103TAYK	R	0.01	50V Mylar	AA	C601	VCEAGA1CW476M	R	47	16V Electrolytic	AB
C305	VCEAGA1HW104M	R	0.1	50V Electrolytic	AA	C602	VCKYPA1HF103Z	R	0.01	50V Ceramic	AA
C306	RC-QZA473TAYK	R	0.047	50V Mylar	AB	C603	VCKYPA1HF103Z	R	0.01	50V Ceramic	AA
C307	VCKYPA1HB331K	R	330p	50V Ceramic	AA	C604	VCEAGA1CW107M	R	100	16V Electrolytic	AB
C308	VCKYPA1HF103Z	R	0.01	50V Ceramic	AA	C605	VCEAGA1CW476M	R	47	16V Electrolytic	AB
C309	VCKYPA1HF103Z	R	0.01	50V Ceramic	AA	C606	VCEAGA1CW476M	R	47	16V Electrolytic	AB
C310	VCEAGA1CW106M	R	10	16V Electrolytic	AA	C607	VCEAGA1HW105M	R	1	50V Electrolytic	AC
C311	VCKYPA2HB102K	R	1000p	500V Ceramic	AA	C608	RC-QZA103TAYK	R	0.01	50V Mylar	AA
C312	VCEAGA1CW477M	R	470	16V Electrolytic	AC	C609	VCEAGA1HW105M	R	1	50V Electrolytic	AC
C314	VCKYPA1HF103Z	R	0.01	50V Ceramic	AA	C610	VCFYSB2EB823J	R	0.082	250V Mylar	AD
C315	VCEAGA1CW106M	R	10	16V Electrolytic	AA	C611	VCKYPA2HB102K	R	1000p	500V Ceramic	AA
C316	VCKYPA1HF103Z	R	0.01	50V Ceramic	AA	C612	RC-KZ0037CEZZ	R	390p	2kV Ceramic	AB
C318	VCEAGA1HW225M	R	2.2	50V Electrolytic	AB	C613	VCFFPD2DB564J	R	0.56	200V Polypro Film	AF
C319	VCKYD41CY103N	R	0.01	16V Ceramic	AA	C614	VCEAGA1CW106M	R	10	16V Electrolytic	AA
C320	VCEAGA1CW337M	R	330	16V Electrolytic	AC	C615	VCQPSD2DA224J	R	0.22	200V Polypro Film	AD
C321	VCKYPA1HF103Z	R	0.01	50V Ceramic	AA	C616	VCFFPD3CA752J	R	7500p	1.6kV Polypro Film	AE
C322	VCEAGA1HW225M	R	2.2	50V Electrolytic	AB	C617	RC-QZA104TAYK	R	0.1	50V Mylar	AB
C323	VCEAGA1HW105M	R	1	50V Electrolytic	AC	C619	VCEAGA2AW106M	R	10	100V Electrolytic	AC
C327	VCEAGA1HW225M	R	2.2	50V Electrolytic	AB	C620	VCEAGA1HW105M	R	1	50V Electrolytic	AC
C328	VCEAGA1CW106M	R	10	16V Electrolytic	AA	C622	VCEAGA1HW105M	R	1	50V Electrolytic	AC
C329	VCEAGA1HW105M	R	1	50V Electrolytic	AC	C630	VCKYPA1HF103Z	R	0.01	50V Ceramic	AA
C330	RC-QZA473TAYK	R	0.047	50V Mylar	AB	C636	VCEAGA1CW476M	R	47	16V Electrolytic	AB
C331	VCKYD41HB102K	R	1000p	50V Ceramic	AA	C650	VCFYFA1HA224J	R	0.22	50V Mylar	AB
C401	VCEAGA1CW106M	R	10	16V Electrolytic	AA	C653	VCKYAT1EX103N	R	0.01	25V Ceramic	AA
C402	VCKYPA1HF103Z	R	0.01	50V Ceramic	AA	C654	VCEAGA1CW476M	R	47	16V Electrolytic	AB
C403	VCEAGA1CW106M	R	10	16V Electrolytic	AA	C655	VCKYPA1HF103Z	R	0.01	50V Ceramic	AA
C404	VCKYPA1HF103Z	R	0.01	50V Ceramic	AA	C656	VCEAGA0JW107M	R	100	6.3V Electrolytic	AB
C406	VCEAGA1CW108M	R	1000	16V Electrolytic	AD	△ C701	RC-FZ017SCEZZ	R	0.1	AC250V Special	AD
C408	VCKYPA1HF103Z	R	0.01	50V Ceramic	AA	△ C703	RC-KZ0029CEZZ	R	0.01	AC250V Ceramic	AC
C409	VCEAGA1CW106M	R	10	16V Electrolytic	AA	△ C704	RC-KZ0029CEZZ	R	0.01	AC250V Ceramic	AC
C410	RC-QZA104TAYK	R	0.1	50V Mylar	AB	△ C705	RC-KZ0029CEZZ	R	0.01	AC250V Ceramic	AC
C411	VCEAGA1HW475M	R	4.7	50V Electrolytic	AB	△ C706	RC-KZ0029CEZZ	R	0.01	AC250V Ceramic	AC
C412	VCKYPA1HF103Z	R	0.01	50V Ceramic	AA	△ C707	RC-EZ0545CEZZ	R	68	400V Electrolytic	AQ
C413	VCEAGA1CW107M	R	100	16V Electrolytic	AB	△ C708	RC-KZ0029CEZZ	R	0.01	AC250V Ceramic	AC
C414	VCKYPA1HF103Z	R	0.01	50V Ceramic	AA	△ C709	VCEAGA1EW107M	R	100	25V Electrolytic	AD
C415	RC-QZA104TAYK	R	0.1	50V Mylar	AB	△ C710	VCKYPA2HB102K	R	1000p	500V Ceramic	AA
C416	VCEAGA1CW226M	R	22	16V Electrolytic	AB	△ C711	RC-QZA471TAYJ	R	470p	50V Mylar	AB
C417	VCEAGA1HW105M	R	1	50V Electrolytic	AC	△ C712	VCFYHA1HA564J	R	0.56	50V Mylar	AD
C418	VCEAGA1CW477M	R	470	16V Electrolytic	AC	△ C713	VCKYPA2HB102K	R	1000p	500V Ceramic	AA
C419	VCCCPA1HH560J	R	56p	50V Ceramic	AA	△ C714	RC-QZA563TAYK	R	0.056	50V Mylar	AB
C501	VCEACA1HC105M	R	1	50V Electrolytic	AC	△ C715	VCEAGA1HW106M	R	10	50V Electrolytic	AC
C502	VCKYPA1HB471K	R	470p	50V Ceramic	AA	△ C716	VCEAGA1HW105M	R	1	50V Electrolytic	AC
C503	RC-QZA104TAYK	R	0.1	50V Mylar	AB	△ C720	VCEAGA1JW476M	R	47	63V Electrolytic	AB
						△ C721	RC-KZ0341CEZZ	R	1000p	2kV Ceramic	AD

Ref. No.	Part No.	★	Description	Code
PWB-A: DUNTK9398WET4				
MAIN UNIT (Continued)				
△ C723	VCKYPA2HB102K	R	1000p 500V Ceramic	AA
△ C724	RC-KZ0029CEZZ	R	0.01 AC250V Ceramic	AC
△ C725	VCFYFA1HA474J	R	0.47 50V Mylar	AC
△ C726	VCKYPA1HB102K	R	1000p 50V Ceramic	AA
△ C729	VCEAGA1CW477M	R	470 16V Electrolytic	AC
C731	RC-EZ0724CEZZ	R	100 160V Electrolytic	AG
C732	RC-KZ0341CEZZ	R	1000p 2kV Ceramic	AD
C733	VCKYPA2HB102K	R	1000p 500V Ceramic	AA
C734	VCEAGA1CW477M	R	470 16V Electrolytic	AC
△ C736	RC-KZ0029CEZZ	R	0.01 AC250V Ceramic	AC
△ C737	RC-EZ0724CEZZ	R	100 160V Electrolytic	AG
△ C741	VCKYPA2HB472K	R	4700p 500V Ceramic	AB
△ C742	VCFYFA1HA394J	R	0.39 50V Mylar	AC
△ C747	RC-KZ017SCEZZ	R	680p 4 kV Ceramic	AD
△ C750	VCKYPA1HF103Z	R	0.01 50V Ceramic	AA
C801	VCEAGA1HW475M	R	4.7 50V Electrolytic	AB
C802	RC-QZA103TAYK	R	0.01 50V Mylar	AA
C803	RC-QZA103TAYK	R	0.01 50V Mylar	AA
C804	RC-QZA103TAYK	R	0.01 50V Mylar	AA
C805	VCEAGA1CW107M	R	100 16V Electrolytic	AB
C806	VCKYPA1HF103Z	R	0.01 50V Ceramic	AA
C807	VCEAGA1CW107M	R	100 16V Electrolytic	AB
C808	VCKYPA1HF103Z	R	0.01 50V Ceramic	AA
C809	VCKYPA1HF103Z	R	0.01 50V Ceramic	AA
C810	VCCCPA1HH120J	R	12p 50V Ceramic	AA
C811	VCKYPA1HF103Z	R	0.01 50V Ceramic	AA
C812	VCEAGA1CW107M	R	100 16V Electrolytic	AB
C813	RC-QZA104TAYK	R	0.1 50V Mylar	AB
C814	RC-QZA104TAYK	R	0.1 50V Mylar	AB
C815	VCEAGA1HW105M	R	1 50V Electrolytic	AC
C816	RC-QZA103TAYK	R	0.01 50V Mylar	AA
C817	VCEAGA1CW227M	R	220 16V Electrolytic	AC
C820	VCKYAT1EX103N	R	0.01 25V Ceramic	AA
C822	VCKYD41CY103N	R	0.01 16V Ceramic	AA
C901	RC-QZA104TAYK	R	0.1 50V Mylar	AB
C1001	VCCCPA1HH330J	R	33p 50V Ceramic	AA
C1002	VCCSPA1HL330J	R	33p 50V Ceramic	AA
C1003	VCCCPA1HH330J	R	33p 50V Ceramic	AA
C1004	VCCCPA1HH330J	R	33p 50V Ceramic	AA
C1005	VCEAGA1HW105M	R	1 50V Electrolytic	AC
C1006	VCEAGA1AW107M	R	100 10V Electrolytic	AB
C1007	VCKYPA1HF103Z	R	0.01 50V Ceramic	AA
C1008	VCEAGA1AW476M	R	47 10V Electrolytic	AA
C1009	VCEAGA1CW106M	R	10 16V Electrolytic	AA
C1010	VCEAGA1CW106M	R	10 16V Electrolytic	AA
C1011	VCCSPA1HL101J	R	100p 50V Ceramic	AA
C1012	VCKYAT1EX103N	R	0.01 25V Ceramic	AA
C1013	VCCSPA1HL471J	R	470p 50V Ceramic	AA
C1014	VCCCPA1HH560J	R	56p 50V Ceramic	AA
C1015	VCEAGA1CW476M	R	47 16V Electrolytic	AB
C1016	VCEAGA0JW107M	R	100 6.3V Electrolytic	AB
C1017	VCKYPA1HF103Z	R	0.01 50V Ceramic	AA
C1018	VCCCPA1HH680J	R	68p 50V Ceramic	AA
C1019	VCCCPA1HH680J	R	68p 50V Ceramic	AA

Ref. No.	Part No.	★	Description	Code
C1020	VCEAGA0JW107M	R	100 6.3V Electrolytic	AB
C1021	VCCSPA1HL181J	R	180p 50V Ceramic	AA
C1022	VCKYD41CY103N	R	0.01 16V Ceramic	AA
C1023	VCKYD41CY103N	R	0.01 16V Ceramic	AA
C1024	VCKYD41CY103N	R	0.01 16V Ceramic	AA
C1025	VCKYD41CY103N	R	0.01 16V Ceramic	AA
C1026	VCKYD41CY103N	R	0.01 16V Ceramic	AA
C1027	VCKYD41CY103N	R	0.01 16V Ceramic	AA
C1028	VCKYD41CY103N	R	0.01 16V Ceramic	AA
C1029	VCKYD41CY103N	R	0.01 16V Ceramic	AA
C1030	VCKYD41CY103N	R	0.01 16V Ceramic	AA
C1031	VCKYD41CY103N	R	0.01 16V Ceramic	AA
C1032	VCKYD41CY103N	R	0.01 16V Ceramic	AA
RESISTORS				
R201	VRD-RA2BE680J	R	68 1/8W Carbon	AA
R202	VRD-RA2BE680J	R	68 1/8W Carbon	AA
R206	VRD-RA2BE680J	R	68 1/8W Carbon	AA
R207	VRD-RA2BE392J	R	3.9k 1/8W Carbon	AA
R209	VRD-RA2BE122J	R	1.2k 1/8W Carbon	AA
R210	VRD-RA2BE122J	R	1.2k 1/8W Carbon	AA
R212	VRD-RA2BE101J	R	100 1/8W Carbon	AB
R213	VRD-RA2BE102J	R	1k 1/8W Carbon	AA
R214	VRD-RA2BE222J	R	2.2k 1/8W Carbon	AA
R215	VRD-RA2BE102J	R	1k 1/8W Carbon	AA
R218	VRD-RA2BE273J	R	27k 1/8W Carbon	AA
R219	VRD-RA2BE154J	R	150k 1/8W Carbon	AA
R220	VRD-RA2BE184J	R	180k 1/8W Carbon	AA
R221	VRD-RA2BE223J	R	22k 1/8W Carbon	AA
R222	VRD-RA2BE472J	R	4.7k 1/8W Carbon	AA
R223	VRD-RA2BE472J	R	4.7k 1/8W Carbon	AA
R224	VRD-RA2BE472J	R	4.7k 1/8W Carbon	AA
R225	VRD-RA2BE472J	R	4.7k 1/8W Carbon	AA
R226	VRD-RA2EE120J	R	12 1/4W Carbon	AA
R227	VRD-RA2EE120J	R	12 1/4W Carbon	AA
R228	VRD-RA2BE103J	R	10k 1/8W Carbon	AA
R229	VRD-RA2BE103J	R	10k 1/8W Carbon	AA
R230	VRD-RA2BE153J	R	15k 1/8W Carbon	AA
R231	VRD-RA2BE473J	R	47k 1/8W Carbon	AA
R232	VRD-RA2BE473J	R	47k 1/8W Carbon	AA
R233	VRD-RA2BE473J	R	47k 1/8W Carbon	AA
R234	VRD-RA2BE103J	R	10k 1/8W Carbon	AA
R235	VRD-RA2BE472J	R	4.7k 1/8W Carbon	AA
R237	VRD-RA2BE392J	R	3.9k 1/8W Carbon	AA
R238	VRS-VV3DB153J	R	15k 2W Metal Oxide	AA
R242	VRD-RA2BE151J	R	150 1/8W Carbon	AA
R243	VRD-RA2BE473J	R	47k 1/8W Carbon	AA
R244	VRD-RA2BE683J	R	68k 1/8W Carbon	AA
R247	VRD-RA2BE222J	R	2.2k 1/8W Carbon	AA
R249	VRD-RA2BE102J	R	1k 1/8W Carbon	AA
R250	VRD-RA2BE393J	R	39k 1/8W Carbon	AA
R251	VRD-RA2BE560J	R	56 1/8W Carbon	AA
R252	VRD-RA2BE561J	R	560 1/8W Carbon	AA
R253	VRD-RA2BE393J	R	39k 1/8W Carbon	AA
R254	VRD-RA2EE395J	R	3.9M 1/4W Carbon	AA
R301	VRD-RA2BE102J	R	1k 1/8W Carbon	AA
R302	VRD-RA2BE332J	R	3.3k 1/8W Carbon	AA

Ref. No.	Part No.	★	Description	Code	Ref. No.	Part No.	★	Description	Code
PWB-A: DUNTK9398WET4									
MAIN UNIT (Continued)									
R303	VRD-RA2BE392J	R	3.9k 1/8W Carbon	AA	R613	VRD-RA2BE103J	R	10k 1/8W Carbon	AA
R304	VRD-RA2BE392J	R	3.9k 1/8W Carbon	AA	R614	VRD-RM2HD180J	R	18 1/2W Carbon	AA
R305	VRD-RA2BE473J	R	47k 1/8W Carbon	AA	R617	VRS-VV3AB330J	R	33 1W Metal Oxide	AA
R306	VRD-RA2BE100J	R	10 1/8W Carbon	AA	R618	VRD-RM2HD102J	R	1k 1/2W Carbon	AA
R308	VRD-RA2BE153J	R	15k 1/8W Carbon	AA	R619	VRD-RA2BE393J	R	39k 1/8W Carbon	AA
R309	VRD-RA2BE123J	R	12k 1/8W Carbon	AA	△ R620	RR-XZ0085CEZZ	R	3.9 1/4W Fuse Resistor	AC
R310	VRD-RA2BE104J	R	100k 1/8W Carbon	AA	R621	VRN-RV3AB1R5J	R	1.5 1W Metal Film	AA
R313	VRD-RA2BE273J	R	27k 1/8W Carbon	AA	R622	VRD-RM2HD223J	R	22k 1/2W Carbon	AA
R314	VRD-RA2BE332J	R	3.3k 1/8W Carbon	AA	R623	VRD-RA2EE683G	R	68k 1/4W Carbon	AB
R315	VRD-RA2BE563J	R	56k 1/8W Carbon	AA	R624	VRD-RA2BE123G	R	12k 1/8W Carbon	AA
R316	VRD-RA2BE123J	R	12k 1/8W Carbon	AA	R625	VRD-RA2BE103J	R	10k 1/8W Carbon	AA
R317	VRD-RA2BE123J	R	12k 1/8W Carbon	AA	R630	VRD-RA2BE123J	R	12k 1/8W Carbon	AA
R318	VRD-RA2BE681J	R	680 1/8W Carbon	AA	R631	VRD-RA2BE102J	R	1k 1/8W Carbon	AA
R319	VRD-RA2BE393J	R	39k 1/8W Carbon	AA	R633	VRD-RA2BE472J	R	4.7k 1/8W Carbon	AA
R320	VRD-RA2BE223J	R	22k 1/8W Carbon	AA	R634	VRD-RM2HD101J	R	100 1/2W Carbon	AA
R321	VRD-RA2BE473J	R	47k 1/8W Carbon	AA	R635	VRD-RA2BE154J	R	150k 1/8W Carbon	AA
R322	VRN-VV3DB2R2J	R	2.2 2W Metal Film	AB	R640	VRD-RM2HD682J	R	6.8k 1/2W Carbon	AA
R324	VRD-RA2BE102J	R	1k 1/8W Carbon	AA	R642	VRD-RA2BE103J	R	10k 1/8W Carbon	AA
R328	VRD-RA2BE472J	R	4.7k 1/8W Carbon	AA	R646	VRD-RM2HD5R6J	R	5.6 1/2W Carbon	AA
R401	VRD-RA2EE750J	R	75 1/4W Carbon	AA	R647	VRD-RM2HD5R6J	R	5.6 1/2W Carbon	AA
R402	VRD-RA2BE103J	R	10k 1/8W Carbon	AA	R648	VRD-RM2HD5R6J	R	5.6 1/2W Carbon	AA
R406	VRD-RA2BE102J	R	1k 1/8W Carbon	AA	R651	VRD-RM2HD101J	R	100 1/2W Carbon	AA
R408	VRD-RA2BE222J	R	2.2k 1/8W Carbon	AA	R653	VRD-RA2BE822J	R	8.2k 1/8W Carbon	AA
R409	VRD-RA2BE824J	R	820k 1/8W Carbon	AA	R654	VRD-RM2HD560J	R	56 1/2W Carbon	AA
R415	VRD-RA2BE101J	R	100 1/8W Carbon	AB	R655	VRD-RM2HD180J	R	18 1/2W Carbon	AA
R416	VRD-RM2HD470J	R	47 1/2W Carbon	AA	R656	VRD-RM2HD5R6J	R	5.6 1/2W Carbon	AA
R417	VRD-RA2EE750J	R	75 1/4W Carbon	AA	R657	VRD-RA2BE103J	R	10k 1/8W Carbon	AA
R418	VRD-RA2BE223J	R	22k 1/8W Carbon	AA	R658	VRD-RM2HD470J	R	47 1/2W Carbon	AA
R419	VRD-RA2BE223J	R	22k 1/8W Carbon	AA	R660	VRD-RA2BE681J	R	680 1/8W Carbon	AA
R420	VRD-RA2BE103J	R	10k 1/8W Carbon	AA	△ R702	VRW-KQ3NC3R9K	R	3.9 7W Cement	AE
R421	VRD-RM2HD470J	R	47 1/2W Carbon	AA	△ R703	VRS-KT3LB273J	R	27k 3W Metal Oxide	AD
R422	VRD-RA2BE222J	R	2.2k 1/8W Carbon	AA	△ R704	VRS-SV3DB100J	R	10 2W Metal Oxide	AA
R504	VRD-RA2BE221J	R	220 1/8W Carbon	AA	△ R705	VRN-VV3AB2R2J	R	2.2 1W Metal Film	AA
R506	VRD-RA2BE102J	R	1k 1/8W Carbon	AA	△ R706	VRD-RA2BE124J	R	120k 1/8W Carbon	AA
R510	VRD-RM2HD1R5J	R	1.5 1/2W Carbon	AA	△ R707	VRD-RA2BE270J	R	27 1/8W Carbon	AA
R511	VRD-RA2BE333J	R	33k 1/8W Carbon	AA	△ R710	VRD-RA2BE392J	R	3.9k 1/8W Carbon	AA
R513	VRD-RA2BE273J	R	27k 1/8W Carbon	AA	△ R712	VRD-RA2BE821J	R	820 1/8W Carbon	AA
R514	VRD-RA2BE563J	R	56k 1/8W Carbon	AA	△ R715	VRD-RA2BE153J	R	15k 1/8W Carbon	AA
R515	VRD-RA2EE220J	R	22 1/4W Carbon	AA	△ R716	VRD-RA2BE180J	R	18 1/8W Carbon	AA
R516	VRD-RM2HD331J	R	330 1/2W Carbon	AA	△ R717	VRD-RA2BE101J	R	100 1/8W Carbon	AB
R517	VRD-RA2BE223J	R	22k 1/8W Carbon	AA	△ R718	VRN-VV3ABR22J	R	0.22 1W Metal Film	AA
R518	VRD-RA2BE102J	R	1k 1/8W Carbon	AA	△ R719	VRC-UA2HG825K	R	8.2M 1/2W Solid	AA
R519	VRD-RM2HD152J	R	1.5k 1/2W Carbon	AA	△ R720	VRC-UA2HG825K	R	8.2M 1/2W Solid	AA
R601	VRD-RA2BE224J	R	220k 1/8W Carbon	AA	△ R721	VRD-RM2HD1R0J	R	1 1/2W Carbon	AA
R602	VRD-RA2BE103J	R	10k 1/8W Carbon	AA	△ R723	VRS-VV3LB272J	R	2.7k 3W Metal Oxide	AB
R604	VRD-RA2BE391J	R	390 1/8W Carbon	AA	△ R724	VRD-RA2BE102J	R	1k 1/8W Carbon	AA
R605	VRD-RA2BE102J	R	1k 1/8W Carbon	AA	△ R735	VRD-RM2HD184J	R	180k 1/2W Carbon	AA
R606	VRD-RA2BE681J	R	680 1/8W Carbon	AA	△ R736	VRD-RM2HD184J	R	180k 1/2W Carbon	AA
R607	VRD-RA2BE103J	R	10k 1/8W Carbon	AA	R802	VRD-RA2BE561J	R	560 1/8W Carbon	AA
R608	VRD-RM2HD472J	R	4.7k 1/2W Carbon	AA	R803	VRD-RA2BE561J	R	560 1/8W Carbon	AA
R609	VRS-SV3LB332J	R	3.3k 3W Metal Oxide	AB	R804	VRD-RA2BE561J	R	560 1/8W Carbon	AA
R610	VRD-RA2BE822J	R	8.2k 1/8W Carbon	AA	R805	VRD-RA2BE222J	R	2.2k 1/8W Carbon	AA
R611	VRW-KQ3NC4R7K	R	4.7 7W Cement	AE	R809	VRD-RA2BE102J	R	1k 1/8W Carbon	AA
R612	VRG-PD2HD820J	R	82 1/2W Fuse Resistor	AC	R810	VRD-RA2BE102J	R	1k 1/8W Carbon	AA
					R811	VRD-RA2BE102J	R	1k 1/8W Carbon	AA
					R812	VRD-RA2BE101J	R	100 1/8W Carbon	AB
					R813	VRD-RA2BE101J	R	100 1/8W Carbon	AB

Ref. No.	Part No.	★	Description	Code
PWB-A: DUNTK9398WET4				
MAIN UNIT (Continued)				
R814	VRD-RA2BE273J	R 27k	1/8W Carbon	AA
R815	VRD-RA2BE223J	R 22k	1/8W Carbon	AA
R816	VRD-RA2BE473J	R 47k	1/8W Carbon	AA
R817	VRD-RA2BE473J	R 47k	1/8W Carbon	AA
R819	VRD-RA2BE102J	R 1k	1/8W Carbon	AA
R820	VRD-RA2BE101J	R 100	1/8W Carbon	AB
R821	VRD-RA2BE101J	R 100	1/8W Carbon	AB
R822	VRD-RA2BE101J	R 100	1/8W Carbon	AB
R823	VRD-RA2BE102J	R 1k	1/8W Carbon	AA
R824	VRD-RA2BE102J	R 1k	1/8W Carbon	AA
R825	VRD-RA2BE102J	R 1k	1/8W Carbon	AA
R826	VRD-RA2BE223J	R 22k	1/8W Carbon	AA
R1001	VRD-RA2BE472J	R 4.7k	1/8W Carbon	AA
R1002	VRD-RA2BE472J	R 4.7k	1/8W Carbon	AA
R1003	VRD-RA2BE472J	R 4.7k	1/8W Carbon	AA
R1004	VRD-RA2BE473J	R 47k	1/8W Carbon	AA
R1005	VRD-RA2BE562J	R 5.6k	1/8W Carbon	AA
R1006	VRD-RA2BE101J	R 100	1/8W Carbon	AB
R1009	VRD-RA2BE101J	R 100	1/8W Carbon	AB
R1010	VRD-RA2BE683J	R 68k	1/8W Carbon	AA
R1011	VRD-RA2BE683J	R 68k	1/8W Carbon	AA
R1012	VRD-RA2BE102J	R 1k	1/8W Carbon	AA
R1014	VRD-RA2BE472J	R 4.7k	1/8W Carbon	AA
R1015	VRD-RA2BE332J	R 3.3k	1/8W Carbon	AA
R1016	VRD-RA2BE101J	R 100	1/8W Carbon	AB
R1017	VRD-RA2BE683J	R 68k	1/8W Carbon	AA
R1018	VRD-RA2BE101J	R 100	1/8W Carbon	AB
R1019	VRD-RA2BE101J	R 100	1/8W Carbon	AB
R1021	VRD-RA2BE102J	R 1k	1/8W Carbon	AA
R1022	VRD-RA2BE102J	R 1k	1/8W Carbon	AA
R1023	VRD-RA2BE102J	R 1k	1/8W Carbon	AA
R1024	VRD-RA2BE683J	R 68k	1/8W Carbon	AA
R1026	VRD-RA2BE102J	R 1k	1/8W Carbon	AA
R1027	VRD-RA2BE562J	R 5.6k	1/8W Carbon	AA
R1028	VRD-RA2BE332J	R 3.3k	1/8W Carbon	AA
R1030	VRD-RA2BE101J	R 100	1/8W Carbon	AB
R1031	VRD-RA2BE333J	R 33k	1/8W Carbon	AA
R1032	VRD-RA2BE683J	R 68k	1/8W Carbon	AA
R1034	VRD-RA2BE562J	R 5.6k	1/8W Carbon	AA
R1035	VRD-RA2BE562J	R 5.6k	1/8W Carbon	AA
R1036	VRD-RA2BE182J	R 1.8k	1/8W Carbon	AA
R1037	VRD-RA2BE103J	R 10k	1/8W Carbon	AA
R1038	VRD-RA2BE333J	R 33k	1/8W Carbon	AA
R1039	VRD-RA2BE271J	R 270	1/8W Carbon	AA
R1040	VRD-RA2BE271J	R 270	1/8W Carbon	AA
R1041	VRD-RA2BE103J	R 10k	1/8W Carbon	AA
R1042	VRD-RA2BE562J	R 5.6k	1/8W Carbon	AA
R1043	VRD-RA2BE103J	R 10k	1/8W Carbon	AA
R1044	VRD-RA2BE562J	R 5.6k	1/8W Carbon	AA
R1045	VRD-RM2HD180J	R 18	1/2W Carbon	AA
R1046	VRD-RM2HD180J	R 18	1/2W Carbon	AA
R1047	VRD-RA2BE472J	R 4.7k	1/8W Carbon	AA
R1049	VRD-RA2BE473J	R 47k	1/8W Carbon	AA
R1050	VRD-RA2BE473J	R 47k	1/8W Carbon	AA
R1051	VRD-RA2BE393J	R 39k	1/8W Carbon	AA

Ref. No.	Part No.	★	Description	Code
R1052	VRD-RA2BE272J	R 2.7k	1/8W Carbon	AA
R1055	VRD-RM2HD101J	R 100	1/2W Carbon	AA
R1057	VRD-RA2BE273J	R 27k	1/8W Carbon	AA
R1058	VRD-RA2BE822J	R 8.2k	1/8W Carbon	AA
R1059	VRD-RA2BE472J	R 4.7k	1/8W Carbon	AA
R1060	VRD-RA2BE222J	R 2.2k	1/8W Carbon	AA
R1061	VRD-RA2BE103J	R 10k	1/8W Carbon	AA
R1062	VRD-RM2HD180J	R 18	1/2W Carbon	AA
R1063	VRD-RA2BE103J	R 10k	1/8W Carbon	AA
R1064	VRD-RA2BE102J	R 1k	1/8W Carbon	AA
R1065	VRD-RA2BE102J	R 1k	1/8W Carbon	AA
R1067	VRD-RA2BE562J	R 5.6k	1/8W Carbon	AA
R1068	VRD-RA2BE683J	R 68k	1/8W Carbon	AA
R1070	VRD-RA2BE562J	R 5.6k	1/8W Carbon	AA
R1072	VRD-RA2BE153J	R 15k	1/8W Carbon	AA
R1075	VRD-RA2BE102J	R 1k	1/8W Carbon	AA
R1076	VRD-RA2BE102J	R 1k	1/8W Carbon	AA

SWITCHES

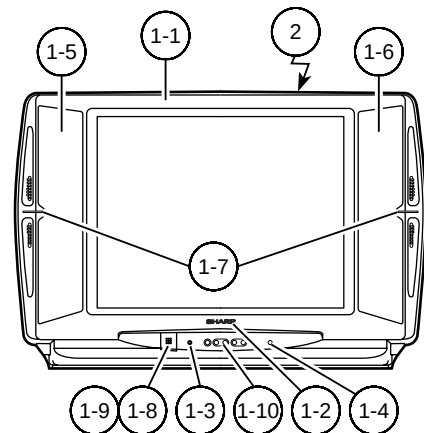
△ S701	QSW-P0588CEZZ	R Main Power	AP
S1001	QSW-K0079GEZZ	R CH-Up	AB
S1002	QSW-K0079GEZZ	R CH-Down	AB
S1003	QSW-K0079GEZZ	R VOL-Up	AB
S1004	QSW-K0079GEZZ	R VOL-Down	AB
S1005	QSW-K0079GEZZ	R Pre-Set	AB
S1006	QSW-B0015CEZZ	R Set-Up	AC

MISCELLANEOUS PARTS

△ F301	QFS-J1521CEZZ	R IC Protector	AF
△ F701	QFS-C3229CEZZ	R Fuse T3.15A	AD
FB305	RBLN-0037CEZZ	R Ferrite Bead	AB
FB602	RBLN-0037CEZZ	R Ferrite Bead	AB
△ FB702	RBLN-0037CEZZ	R Ferrite Bead	AB
△ FB706	RBLN-0037CEZZ	R Ferrite Bead	AB
FB731	RBLN-0080CEZZ	R Ferrite Bead	AD
FH701	QFSDH1013CEZZ	R Fuse Holder	AC
FH702	QFSDH1014CEZZ	R Fuse Holder	AC
J401	QTANJ0429CEZZ	R AV Terminal	AH
P201	QPLGN0241CEZZ	R Plug, 2-pin (TP210)	AA
P302	QPLGN0441CEZZ	R Plug, 4-pin (S)	AB
P502	QPLGN0603CEZZ	R Plug, 6-pin (F)	AB
P602	QPLGN0441CEZZ	R Plug, 4-pin (H)	AB
△ P711	QPLGN0207CEZZ	R Plug, 2-pin (G)	AA
△ P712	QPLGN0269GEZZ	R Plug, 2-pin (A)	AB
P801	QPLGN0541CEZZ	R Plug, 5-pin (K)	AB
P1001	QPLGN0441CEZZ	R Plug, 4-pin (BC)	AB
RMC1001	RRMCU0222CEZZ	R R/C Receiver	AL
SLD1001	PSLDM0233PEFW	R Shield	AC
SLD201	PSLDM0232PEFW	R Shield	AD
RDA351	PRDAR0142PEFW	R Heat Sink, IC351	AD
	PRDAR0222PEFW	R Heat Sink, Q701	AH
	PRDAR0223PEFW	R Heat Sink, IC501	AF
	PRDAR0224PEFW	R Heat Sink, Q602	AF
	LHLDP1042PE00	R Holder	AG
	LX-BZ3100CEFD	R Screw	AA
	LX-TZ3004CEFD	R Screw	AA

Ref. No.	Part No.	★	Description	Code
PWB-B: DUNTK9399WET4 CRT UNIT				
TRANSISTORS				
Q851	VS2SC3789//1E	R	2SC3789	AE
Q852	VS2SC3789//1E	R	2SC3789	AE
Q853	VS2SC3789//1E	R	2SC3789	AE
Q854	VS2SA1015Y/1E	R	2SA1015Y	AC
DIODES				
D851	RH-DX0475CEZZ	R	Diode	AB
D852	RH-DX0475CEZZ	R	Diode	AB
D853	RH-DX0475CEZZ	R	Diode	AB
COIL				
L851	VP-CF681K0000	R	Peaking 680μH	AB
CAPACITORS				
C851	VCKYPA1HB391K	R	390p 50V Ceramic	AA
C852	VCKYPA1HB391K	R	390p 50V Ceramic	AA
C853	VCKYPA1HB391K	R	390p 50V Ceramic	AA
△ C854	RC-KZ0150CEZZ	R	1000p 3kV Ceramic	AB
C861	VCEAGA1CW106M	R	10 16V Electrolytic	AA
C865	VCKYPA1HB102K	R	1000p 50V Ceramic	AA
C866	VCEAGA2EW106M	R	10 250V Electrolytic	AC
C870	VCEAGA1CW106M	R	10 16V Electrolytic	AA
RESISTORS				
R851	VRD-RA2BE471J	R	470 1/8W Carbon	AA
R852	VRD-RA2BE561J	R	560 1/8W Carbon	AA
R856	VRD-RA2BE471J	R	470 1/8W Carbon	AA
R858	VRD-RA2BE561J	R	560 1/8W Carbon	AA
R859	VRD-RA2BE152J	R	1.5k 1/8W Carbon	AA
R860	VRS-VV3DB123J	R	12k 2W Metal Oxide	AA
R862	VRD-RA2BE471J	R	470 1/8W Carbon	AA
R864	VRD-RA2BE561J	R	560 1/8W Carbon	AA
R865	VRD-RA2BE471J	R	470 1/8W Carbon	AA
R866	VRS-VV3DB123J	R	12k 2W Metal Oxide	AA
R867	VRD-RM2HD272J	R	2.7k 1/2W Carbon	AA
R868	VRS-VV3DB123J	R	12k 2W Metal Oxide	AA
R870	VRD-RA2BE222J	R	2.2k 1/8W Carbon	AA
R871	VRD-RA2BE152J	R	1.5k 1/8W Carbon	AA
R875	VRD-RA2BE560J	R	56 1/8W Carbon	AA
R876	VRD-RA2BE560J	R	56 1/8W Carbon	AA
R877	VRD-RA2BE560J	R	56 1/8W Carbon	AA
R898	VRD-RM2HD272J	R	2.7k 1/2W Carbon	AA
R899	VRD-RM2HD272J	R	2.7k 1/2W Carbon	AA
MISCELLANEOUS PARTS				
P851	QPLGN0441CEZZ	R	Plug, 4-pin (H)	AB
P852	QPLGN0541CEZZ	R	Plug, 5-pin (K)	AB
△ SC851	QSOCV0840CEZZ	R	CRT Socket	AK

Ref. No.	Part No.	★	Description	Code
MISCELLANEOUS PARTS				
△ ACC701	QACCZ3008PEZZ	J	AC Cord	AN
SP1	RSP-Z0003KJZZ		Speaker	
SP2	RSP-Z0003KJZZ		Speaker	
SUPPLIED ACCESSORIES				
ACCESSORIES				
	RRMCG0018KJSA	R	Infrared R/C Unit	BG
	TiNS-0093KJZZ		Opertion Manual	
ACCESSORIES (NOT REPLACMENT ITEM)				
	TMAPC0067KJZZ	-	Service Map	—
PACKING PARTS (NOT REPLACEMENT ITEM)				
	SPAKC0081KJZZ	-	Packing Case	—
	SPAKP0697CEZZ	-	Dust Proof Cover	—
	SPAKX0047KJZZ	-	Buffer Material, Top	—
	SPAKX0048KJZZ	-	Buffer Material, Bottom	—
	SSAKA0230CEZZ	-	Polyethylene Sack	—
CABINET PARTS				
1	CCABA0046KJSA		Front Cabinet Ass'y	
1-1	<i>Not Available</i>	-	Front Cabinet	—
1-2	HBDGB0001KJSA		Badge, "SHARP"	
1-3	HDECQ0016KJSA		Cover for LED	
1-4	HDECQ0015KJSA		Cover for R/C	
1-5	HPNC-0012KJSA		Punching Metal (L)	
1-6	HPNC-0013KJSA		Punching Metal (R)	
1-7	HDECQ0022KJSA		Speaker Decoration	
1-8	JBTN-0024KJSA		Button, Power	
1-9	MSPRC0005KJFW		Spring, Power Button	
1-10	JBTN-0025KJSA		Button, CH-up/down, Vol-up/down	
2	GCABB0030KJKA		Rear Cabinet	



SHARP

COPYRIGHT © 1998 BY SHARP CORPORATION

ALL RIGHTS RESERVED.

No part of this publication may be reproduced,
stored in a retrieval system, or transmitted in
any form or by any means, electronic, mechanical,
photocopying, recording, or otherwise, without
prior written permission of the publisher.

Other ManualsLib Projects

 www.manualslib.com

 www.manualslib.de

 www.manualslib.es

 www.manualslib.fr

 www.manualslib.nl

 www.manualslib.mx

 www.manualslib.tech 30+ Languages